



# BULLETIN

OF THE

## NUTTALL ORNITHOLOGICAL CLUB:

*A Quarterly Journal of Ornithology.*

VOLUME VII.

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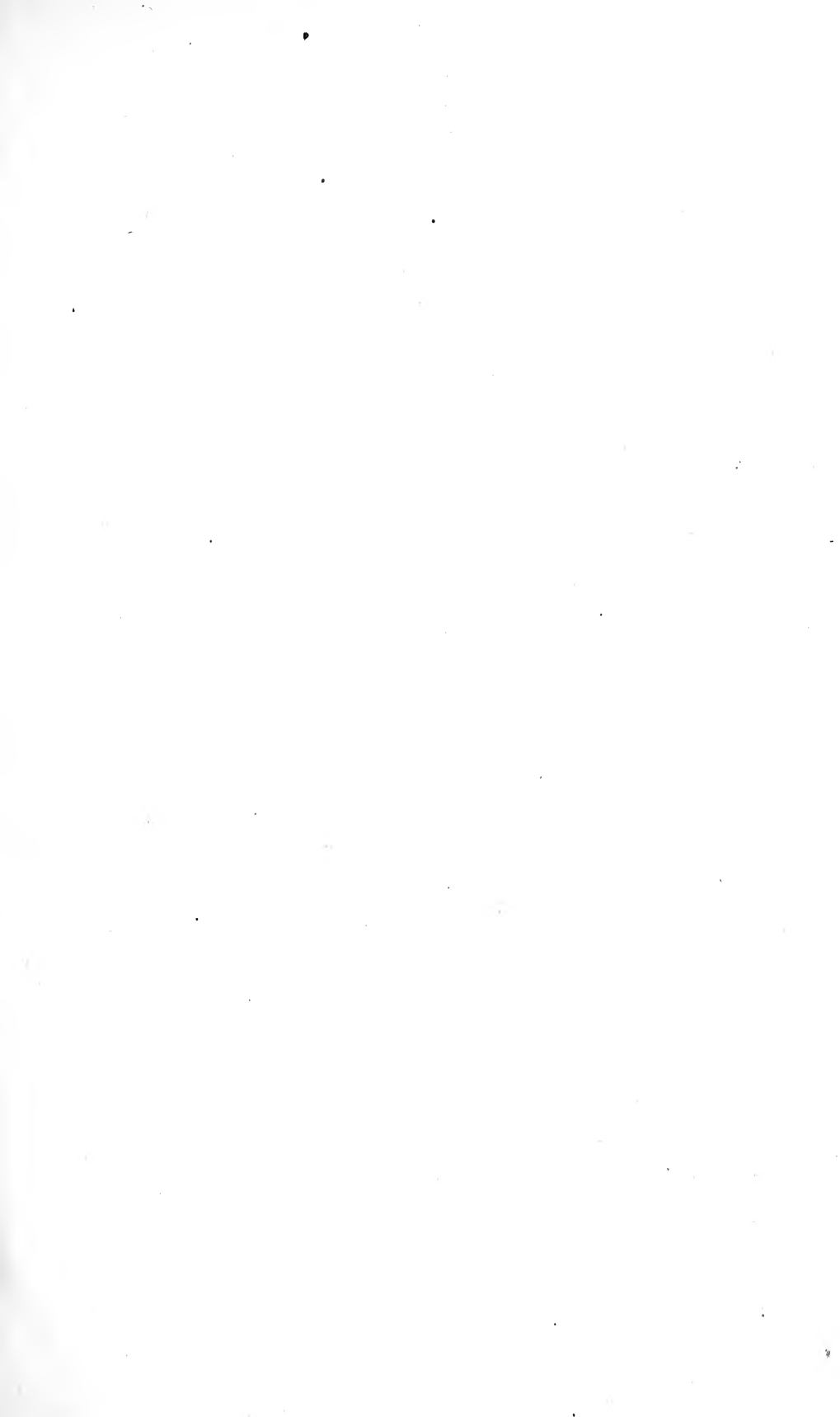
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# BULLETIN

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VOL. VII.

JANUARY, 1882.

No. I.

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### ON AN APPARENTLY NEW HERON FROM FLORIDA.

BY ROBERT RIDGWAY.

The following facts in relation to an apparently hitherto un-noticed large Heron found in Southwestern Florida, I am kindly permitted to lay before the readers of the Nuttall Bulletin, by Mr. Charles W. Ward, of Pontiac, Michigan, who spent several weeks at the breeding grounds of the bird in question, and was thus enabled to make many very interesting observations on its habits, etc. Mr. Ward's memoranda are especially interesting in connection with the question of *Ardea occidentalis* Aud. and *A. würdemanni* Baird, but unfortunately the matter, in the light of the evidence which he adduces, becomes involved in greater obscurity than before.

Under date of September 3 (1881), Mr. Ward writes as follows:—

“My observations of the Herons during the past season do not correspond with those of Mr. N. B. Moore, as recorded on page 232 of your article\*, in regard to their feeding habits. I found them generally living in communities, roosting, nesting, and feeding together, like Pigeons, and often observed flocks of the Little White, Reddish, and other Egrets, feeding together

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\* Cf. Bull. U. S. Geol. Geogr. Survey Terr. Vol. IV, No. 1, pp. 231, 232.

like Teal Ducks. Two specimens of *A. occidentalis* were seen feeding quietly within twenty feet of one of the Herons procured by me [*A. wardi*, nobis]. They were feeding on a mud bar at low tide. I was once concealed in the low brush near a small pool watching three Louisiana Egrets chasing minnows, when two of them making for the same minnow squared off for a knock-down, while the third coolly appropriated the prize, leaving the combatants situated like complainant and defendant at the close of a law suit. In all my observations of the Herons I have seen nothing to lead to a conclusion that one of these birds held any particular antipathy against its own species while feeding. In the many squabbles between Herons on their feeding grounds the encounters occurred quite as often between different species as members of the same species. It may be that during the breeding season they are more friendly than at other times. In order that you may understand my opportunities for observing these birds, I enclose a rough map of Mound Key and surroundings, my camping place from January 20 till April 10. As you will see by the figures marked . . . it was in the midst of their feeding grounds, these places being mud- and sand-bars, bare at low tide. Regarding the Reddish Egret, among many thousands of them I saw only one in the pure white plumage, and no white young; but one of my dark specimens has white feathers on the head and in the tail, while one of the secondary quills has the outer web chiefly white. My companion of last winter's Florida trip reports that he saw no Reddish Egrets with white except on the secondaries.

"Regarding the large Herons [*i.e.*, *A. wardi*], I am much inclined to think them a geographical variety. . . the specimens being very uniform in color. . . I examined some thirty nests at least, fifteen of which contained young, all being dark colored, *with one exception*. These birds are common in South-western Florida, and their nests are frequently found along the coast. From all the information at my command, connected with my own observations, I am almost convinced that the bird in question is separate and distinct from *A. occidentalis* and *A. würdemanni*, and the fact that Audubon found the former in immense numbers among the mangrove islands of Eastern Florida is strong evidence that he happened in the vicinity of one of their rookeries. As you will observe by examining the diagram

of my camping place and noting the rookeries of large Herons . . . these birds were quite common in that vicinity, while I saw only a few specimens of *A. occidentalis*. The white bird found in the nest with the blue might have come there from an adjoining empty nest, some 30 or 40 feet distant, as it could easily have done, being nearly full-grown. This surmise is strengthened by the circumstance that I saw a large white Heron on the island marked '\*', and my companion killed a similar, if not the same, specimen on the large island marked '2,' which he threw away, supposing it to be a common White Egret [*Herodias egretta*]. These I now believe to have been *A. occidentalis*; the other [*H. egretta*] was then laying its eggs, while the description of *A. occidentalis* corresponds to my recollection of the bird he killed. At the time, I was not familiar with the description of *A. occidentalis*.

"In the Little Blue Heron [*Florida caerulea*] and Reddish Egret (*Dichromanassa rufa*), where dichromatism appears to be an established fact, each species presents different phases and mixtures of both colors, especially the Little Blue, which shows almost every variety of curious markings of blue and white; while in the Reddish Egret, one specimen shows white on the head, tail, and wings, and others reported by Mr. Adams show white on the wings.

"As before said, I believe the bird to be a geographical variation of *A. herodias*, residing permanently and breeding in South Florida. I think that further search and observation will develop more evidence concerning *A. occidentalis* and *A. würdemanni*, which may result in confirming your theory of their being one and the same species. You will pardon my opposing your opinion, but my convictions are so strong that only the finding of white birds with blue young and more cases of blue parents with white young, or adults showing mixtures of both phases, would overcome them."

Assuming that the large white birds observed by Mr. Ward were really a white phase of the dark-colored birds obtained by him, and which were so numerous in the locality, it certainly appears strange that so few of the former were seen. The case of the Reddish Egret, which he cites, affords, however, an exact parallel, and it is now considered established beyond question that "Peale's Egret" (*Ardea pealei* Bonap. — a pure white bird)

#### 4 RIDGWAY on an Apparently New Heron from Florida.

is merely a white phase of this species. As to the comparative rarity of these large white birds, in the locality where observed by Mr. Ward, militating against any theory of their specific identity with the dark-colored birds, it should be remembered that in the case of nearly every dichromatic species of bird this condition is more or less variable with locality. A pertinent example may be cited in the case of *Demiegretta sacra*, a Heron of wide distribution in the Far East. This species inhabits a considerable number of islands in the Polynesian group, and it has been noticed and recorded by naturalists who have visited that region, that on some islands all or nearly all the birds of this species are dark-colored, on others all or nearly all are white, while on others still there may be a more equal proportion of the two phases. It may be remarked that the two phases in this species are even more distinct in coloration than in the case of *Dichromanassa rufa*, the colored phase being darker than in the latter species. Upon the whole, even admitting the possibility of the white young bird seen by Mr. Ward having of its own volition taken up its abode in a nest containing dark colored young, I am strongly inclined to believe that it belonged to the same species with the latter, the question of its parentage (*i.e.*, whether its parents were white or dark-colored birds) being a comparatively unimportant consideration, as affecting the main question. But in adopting the view of their specific identity a problem arises which in the light of our present knowledge appears unsolvable, and which may be briefly stated thus:—

The large “blue” Herons obtained by Mr. Ward are, in every respect as regards size and proportions, identical with *Ardea occidentalis* Aud. and *A. würdemanni* Baird; in coloration they agree exactly with the latter, except only in the pattern of the head and tint of the neck, which are precisely as in *A. herodias*. The bird in question is apparently “dichromatic,” having a white phase; hence, assuming that *A. occidentalis* and *A. würdemanni* are dichromatic phases of one species, it necessarily follows that white individuals of the bird in question would be *absolutely indistinguishable from white examples of A. occidentalis*! Still, in view of the fact that the colored phase differs from *A. würdemanni* in its most essential feature of coloration, *i.e.*, the pattern of the head markings, it seems impossible to unite them, unless it can be shown that the type of *A. würdemanni* does not represent

the perfect colored phase of that species.\* There are hence several hypotheses which might be plausibly argued upon theoretical grounds, and which may be stated as follows: (1) That *A. occidentalis*, *A. würdemanni*, *A. wardi*, and *A. herodias* all belong to a single species, which reaches its extremes of variation in the first- and last-named; (2) That these names include three distinct races or species: *A. herodias*, which is never white; *A. occidentalis*, which is dichromatic (having separate white and colored phases), and *A. wardi*, also dichromatic, its white phase indistinguishable from that of *A. occidentalis*, and its colored phase distinguishable from that of the same species (*A. würdemanni*) by the different pattern and color of the head and neck alone; and (3) that there are two species, *A. occidentalis* and *A. herodias*, which in Florida hybridize on an extensive scale, producing the intermediate specimens which have been distinguished as *A. würdemanni* and *A. wardi*.

Of these hypotheses I have, after careful consideration of them all, concluded to adopt the second as being most consistent with known facts, and accordingly propose for the bird in question the name

#### 486\* *Ardea wardi* Ridgw.

##### WARD'S HERON.

With the following characters: —

CH. — Colored phase exactly like *A. würdemanni* (= dark phase of *A. occidentalis* ?), but with the head colored as in *A. herodias*. Differing from *herodias* in much larger size (culmen 6.50–7.00 inches, tarsus, 8.50–9.00 inches), lighter general coloration, and (in dried skin) light brown instead of black legs. Dichromatic; the white phase being indistinguishable from that of *A. occidentalis* (?).

Adult ♂ (No. 82,329, U. S. Nat. Mus., Oyster Bay, Florida, March, 1881; Chas. W. Ward): Head white, with the sides of the crown and entire occiput (including the lengthened plumes) deep black; † neck lavender-gray (much lighter than in the type of *würdemanni*), the fore-neck

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\* After many careful examinations of the type specimen, I am led to the conclusion that it does represent the perfect colored phase, since no combination, or division, of the markings of *A. herodias* and *A. occidentalis* — or, in other words, no partial development of the head-pattern of the former — would give the peculiar markings which distinguish *A. würdemanni*.

† The pattern of coloration of the head exactly as in *A. herodias*, and not at all like *A. würdemanni*.

white thickly streaked with black for the lower two-thirds; jugular plumes chiefly white, their lengthened tapering portion entirely so. Upper surface uniform bluish plumbeous, the lengthened scapular plumes hoary whitish or pale silvery gray. Upper breast uniform black; abdomen and lower breast white, rather indistinctly streaked with dark gray; anal region mixed black and white, in longitudinal dashes (the black rather predominating); crissum immaculate pure white. Tibiæ uniform light cinnamon; edge of the wing (especially near the bend) deeper cinnamon, but this much mixed with white toward the bases of the quills; lining of the wing, axillars, sides, and flanks, uniform plumbeous. Bill, apparently, entirely olivaceous-yellow; naked portion of tibiæ very pale brown (evidently yellowish or flesh-colored in life); tarsi light brown (olivaceous in life?), darker in front; toes light brown. Wing, 20.50: culmen, 6.75; depth of bill through nostril, 1.10; tarsus, 8.75; middle toe, 5.10; naked portion of tibiæ, 5.50.

Mr. W. H. Collins, of Detroit, who kindly presented the specimen described above to the National Museum, has sent me measurements of two other specimens, one in his own possession, the other mounted for Mr. Ward. As may be seen below they agree closely in dimensions with the type, their measurements being, respectively, wing 20.00-20.50; culmen 6.50-7.00; depth of bill through nostril, 1.25; tarsus, 8.75-9.00; middle toe, 5.25-5.45; naked portion of tibia, 5.75-6.00.

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## LIST OF BIRDS OBSERVED AT HOUSTON, HARRIS CO., TEXAS AND VICINITY AND IN THE COUNTIES MONTGOMERY, GALVESTON AND FORD BEND.

BY H. NEHRLING.

1. **Turdus migratorius**, L. ROBIN. — Very common in the woods from November to April. Very shy and retiring during their stay; only a few have been observed in the larger gardens of Houston. Feeds abundantly on the berries of the holly (*Ilex opaca*) and the myrtle-holly (*Oreophila myrtifolia*). About the 15th of April all have departed for the North.

2. **Turdus mustelinus**, Gmel. WOOD THRUSH. — Arrives from the North early in October when the aromatic berries of the *Magnolia grandiflora* are ripe, on which they eagerly feed. On account of this food the flesh is very delicate and large numbers are killed by pot hunters, who call them "Grassets." In the winter months they appear not to be common and inhabit swampy thickets and bottom woods.



3. *Turdus fuscescens*, Steph. WILSON'S THRUSH.—Only a few observed during the fall migration.

4. *Turdus swainsoni*, Cab. OLIVE-BACKED THRUSH.—Not rare during the migrations.

5. *Mimus polyglottus*, Boie. MOCKINGBIRD.—A very abundant resident. Only a few remain to winter, in protected localities; the majority migrate further south. They arrive from their winter quarters early in March and are by the end of that month again common. Nest-building commences usually in the middle of April. Many are killed by farmers and gardeners on account of their fondness for ripe figs and grapes. Besides insects, they feed eagerly on the berries of the poke (*Phytolacca decandra*), the elder (*Sambucus canadensis*), and the Mexican mulberry (*Callicarpa americana*). In winter the berries of the myrtle-holly (*Oreophila myrtifolia*) and those of the mistletoe (*Phoradendron flavescens*) are their principal food.

6. *Mimus carolinensis*, Gray. CATBIRD.—I first observed a single specimen of this bird April 25, 1879. It was then my opinion that this bird must be a very rare migrant, as I did not meet with another that year. It was this year (1881), May 5, when I wandered through the thick underbrush in the woods on Spring Creek that I heard the peculiar cry of the Catbird, and a few minutes after I discovered the nest, which was built in a young oak sapling, about ten feet above the ground. They are not the familiar and confident birds of the Northern States, but extremely shy and retiring in their habits. They kept a good distance from me when I took the nest.

7. *Harporhynchus rufus*, Cab. BROWN THRUSH.—Common during the winter months in the thick underbrush of the woods near Spring Creek, in the northern part of Harris County. Very silent and extremely shy.

8. *Sialia sialis*, Hald. BLUEBIRD.—A very abundant winter sojourner and a common summer resident; but not so abundant as in the Northern States, and not so familiar. Commences to breed as early as February 15. I found a nest March 6, which contained newly hatched young. A nest discovered April 29 contained four pure white eggs.

9. *Regulus calendula*, Licht. RUBY-CROWNED KINGLET, and

10. *Regulus satrapa*, Licht. AMERICAN GOLDEN-CRESTED KINGLET.—Both are common during the winter months, when, in company with Titmice, they inhabit the pine woods near Houston. Are to be observed during the whole winter in the mountain cedars (*Juniperus occidentalis texanus*), which are common in the gardens of the city.

11. *Poliophtila cærulea*, Sclat. BLUE-GRAY GNATCATCHER.—Common in the heavy wooded bottom lands on the Brazos, Spring Creek, and San Jacinto, and especially abundant on Buffalo Bayou when the magnificent *Magnolia grandiflora* is in bloom. Almost with the agility and grace of a Hummingbird, it flies around the showy flowers in pursuit of insects. Nest-building commences early in May. This beautiful little domicile is built very high, in small branches of elms, swamp-oaks (*Quercus palustris*) and other densely leaved forest trees.

12. **Lophophanes bicolor**, *Bon.* TUFTED 'TITMOUSE. — A very common bird and resident throughout the year, even in the city gardens, where it is exceedingly tame and confiding. Breeds as early as the beginning of March. Nests in deserted Woodpeckers' holes, in old stumps, in cedar-posts, in hollow branches, etc.

13. **Parus carolinensis**, *Aud.* SOUTHERN CHICKADEE. — Very common and familiar. Resident throughout the year. April 15 I discovered a nest of this diminutive bird in an old fence-post; it contained six nearly fledged young. The cavity was filled up about nine inches with soft mosses, cow's hair, and the fur of smaller animals. Usually the nest is built in the hollow of a branch.

14. **Thryothorus ludovicianus**, *Bon.* CAROLINA WREN. — Very common in all low wooded localities with dense underbrush. Thickets of smilax, blackberry bushes, snowball (*Viburnum molle* and *V. dentatum*), *Rhamnus carolinianus*, *Bumelia lanuginosa*, intermixed with a few larger trees (oaks or elms), which are commonly overgrown by the mustang-grape and the grotesque forms of the supple jack (*Berchemia volubilis*), are its favorite resorts. In a few instances I have known a pair to build their nest in a bird-box near a dwelling.

15. **Thryothorus bewicki**, *Bonap.* LONG-TAILED HOUSE WREN. — Abundant in all suitable localities and very familiar, breeding in bird-boxes, stables, corn-cribs, and even in houses over doors, etc. One pair built their nest in the pocket of an old coat, hanging out doors.

16. **Troglodytes ædon**, *Vieill.* HOUSE WREN. — Only a winter visitant, occurring in considerable numbers in secluded localities.

17. **Cistothorus palustris**, *Baird.* LONG-BILLED MARSH WREN. — Rare during the migrations.

18. **Cistothorus stellaris**, *Cab.* SHORT-BILLED MARSH WREN. — Observed so late as May 2 in the marshy prairie districts in the northern part of Harris County, and in September in the sugar-cane fields on the Brazos in Ford Bend County. Probably breeds.

19. **Anthus ludovicianus**, *Licht.* AMERICAN PIPIT; TITLARK. — Very common during winter, from the middle of November to the second week in April. Comes fearlessly in the streets of the city and in the door-yards.

20. **Neocorys spraguei**, *Sclat.* MISSOURI SKYLARK. — Observed small flocks early in November on the prairies near Houston. They were often associated with *Passerculus savanna*, and in habits resembled very closely the Titlark. All disappeared soon.

21. **Mniotilta varia**, *Vieill.* BLACK-AND-WHITE CREEPER. — Not uncommon during the migrations. Noted first March 22. At the 15th of April the majority depart for the north, only few remaining to breed.

22. **Parula americana**, *Bon.* BLUE YELLOW-BACKED WARBLER. — This beautiful little Warbler is rather common during the migrations in all wooded portions, especially in the river bottoms, where almost every tree is covered with the long gray Spanish moss (*Tillandsia usneoides*). Some remain to breed, as I have seen the parents feeding the young in July and August.

23. *Protonotaria citrea*, *Bd.* PROTHONOTARY WARBLER. — A not uncommon summer resident in marshy localities on Spring Creek and in Ford Bend County in the Brazos bottom, where so-called lakes are abundant. It breeds in hollows of trees, deserted Woodpeckers' holes, and in stumps standing in the water. I usually met with this bird in localities where the Little Blue Heron (*Florida cærulea*) and the Snowy Heron (*Garzetta candidissima*) were common. I can add nothing to the unsurpassable life-history of this bird given by Mr. William Brewster in this Bulletin, Vol. III, pp. 153-162.

24. *Helminthus vermivorus*, *Bon.* WORM-EATING SWAMP WARBLER. — A few seen April 6, 1881, in a flowering plum tree in a city-garden.

25. *Helminthophaga chrysoptera*, *Cab.* BLUE-WINGED YELLOW WARBLER. — Common during the migrations, in October and April.

26. *Helminthophaga peregrina*, *Cab.* TENNESSEE WARBLER. — Not uncommon during migrations.

27. *Helminthophaga celata*, *Bd.* ORANGE-CROWNED WARBLER. Seen only during migrations and very rare.

28. *Dendroeca æstiva*, *Bd.* SUMMER YELLOW BIRD. — Very abundant during migrations. Not a very common summer sojourner, but quite regularly distributed.

29. *Dendroeca coronata*, *Gray.* YELLOW-RUMPED WARBLER. — The most common of all the Warblers from November to April. Winters abundantly in this region and numbers visit the gardens, even those in the interior of the city.

30. *Dendroeca maculosa*, *Bd.* BLACK-AND-YELLOW WARBLER, and

31. *Dendroeca blackburniæ*, *Bd.* BLACKBURNIAN WARBLER, are both, so far as I observed, exceedingly rare during migrations.

32. *Dendroeca pennsylvanica*, *Bd.* CHESTNUT-SIDED WARBLER. — Somewhat common in the latter part of April and early in May.

33. *Dendroeca castanea*, *Bd.* BAY-BREASTED WARBLER. — This elegant Warbler is one of the most common of its family during the spring migration. I observed small flocks of from eight to ten so late as May 5.

34. *Dendroeca striata*, *Bd.* BLACK-POLL WARBLER. — Transient; arrives from winter quarters late in April, when the host of Warblers pass northward. Tolerably common.

35. *Dendroeca virens*, *Bd.* BLACK-THROATED GREEN WARBLER. — Abundant during migrations. Moves in flocks of from four to ten.

36. *Dendroeca dominica albilora*, *Ridg.* YELLOW-THROATED WARBLER. — A very rare summer resident and very difficult to observe in the high moss-grown forest trees of the river bottoms. The song resembles that of *Dendroeca æstiva*, but is louder and more varied. I think it is almost impossible to discover a nest of this bird in the high trees, so densely covered with *Tillandsia*.

37. *Dendroeca pinus*, *Bd.* PINE WARBLER. — Winters in small companies in the woods in the northern part of Harris County, near Spring Creek.

I did not find so many Warblers as I expected, although I kept a diligent lookout. I did not observe *D. palmarum*, *D. canadensis*, *D. discolor*, or *D. cærulea*.

38. *Siurus auricapillus*, Sw. GOLDEN-CROWNED THRUSH. — Transient and not common.

39. *Siurus naevius*, Coues. WATER THRUSH. — Not uncommon in suitable localities during migrations.

40. *Oporornis formosa*, Bd. KENTUCKY WARBLER. — A common summer resident; exceeding in numbers even the Maryland Yellow-throat, with which it occupies the same localities. Common in wet fields with patches of low bushes, and in the dense undergrowth near water. Visits frequently the country gardens. Very abundant on Spring Creek, in the northern part of Harris County, and in Montgomery County. Arrives about April 21. Commences nest-building early in May. Nest very difficult to find.

41. *Geothlypis trichas*, Cab. MARYLAND YELLOW-THROAT. — Arrives about April 15, from its winter quarters. A common summer sojourner. Like the preceding species, most common in grassy localities with thickets interspersed. On a farm near Houston is a wet piece of land containing about two acres, where I found three pairs breeding. Through this runs a ditch and the whole ground is covered with high broom-grass (*Andropogon macrurus*) with briar patches, thickets of water-oak, *Viburnum dentatum*, black haw (*V. prunifolium*), etc. The field is surrounded by an almost impenetrable hedge of Cherokee-roses (*Rosa lævigata*). Here the Yellow-throats occur with Kentucky Warblers, White-eyed Vireos, Yellow-throated Vireos, Painted Finches, and Blue Grosbeaks, all living in harmony. Two broods are raised yearly in this latitude. In almost every nest of this bird, and also of the Kentucky Warbler, eggs of the Cow Bird are to be found.

42. *Geothlypis philadelphia*, Bd. MOURNING WARBLER. — Transient and rather rare.

43. *Icteria virens*, Bd. YELLOW-BREASTED CHAT. — A common summer resident, arriving from its winter quarters about April 15. Many winter in sheltered places. Its most favorable resorts are briar-patches in fields, thickets on the edge of woods, myrtle-holly thickets overgrown with tangled *Smilax laurifolia*, and similar localities. Nest in the interior of thickets near the ground; it has some resemblance to the Catbird's, and is built of nearly the same material.

44. *Myiodiocetes mitratus*, Aud. HOODED WARBLER. — This beautiful species is common during migrations. Arrives from the South in the last part of April, when the host of Warblers migrate northward. I never observed the bird during the summer months and do not think that any remain to breed.

45. *Myiodiocetes canadensis*, Aud. CANADIAN FLYCATCHING WARBLER. — Not very common during the spring migration.

46. *Myiodiocetes pusillus*, Bon. BLACK-CAPPED WARBLER. — I consider this the most common species of the genus during migrations.

47. *Setophaga ruticilla*, Sw. AMERICAN REDSTART.—Moves northward late in April and early in May, when the throng of Warblers migrate to their summer quarters in high northern latitudes.

48. *Vireosylvia olivacea*, Bon. RED-EYED VIREO.—A common summer resident in all the deciduous woods.

49. *Vireosylvia gilva*, Cass. WARBLING VIREO.—Evidently a rare species, even during the migrations.

50. *Lanivireo flavifrons*, Bd. YELLOW-THROATED VIREO.—Abundant and breeding. The first nest, beautifully constructed, I discovered April 28 in a high blackberry-bush about four feet above the ground, near Houston. It contained four fresh eggs and one of the Dwarf Cowbird (*Molothrus ater obscurus*). Nest and eggs in my collection. Many more nests were discovered during the months of May and June, and many contained one and two eggs of the Cowbird.

51. *Lanivireo solitarius*, Bd. SOLITARY VIREO.—Rare during migrations.

52. *Vireo noveboracensis*, Bon. WHITE-EYED VIREO.—A common summer resident in localities where *Viburnum dentatum*, *V. molle*, *V. prunifolium*, *Rhamnus carolinensis*, *Cornus florida*, laurel-oaks (*Quercus imbricaria*), and elms are growing, especially on the borders of woods, in open thickets, peach gardens, etc.

53. *Vireo belli*, Aud. BELL'S VIREO.—A common summer sojourner. A not quite finished nest was discovered April 15 on a horizontal branch of a *Viburnum dentatum* on the edge of a thicket, about five feet above the ground. It contained three fresh eggs. The nests of this Vireo are more purse-shaped and deeper than any other Vireo nests I am acquainted with.

54. *Lanius ludovicianus excubitorides*, Coues. WHITE-RUMPED SHRIKE.—A generally dispersed summer resident, but not abundant. Prefers to build in the hedges of the osage orange.

55. *Ampelis cedrorum*, Vieill. Cedar Bird.—Abundant migrant. Observed flocks of from thirty to fifty as late as May 6. None remain to breed.

56. *Progne subis*, Bd. PURPLE MARTIN.—Abundant summer resident. Arrives March 1 from the South. Breeds in large numbers under the wooden awnings of sidewalks, even in the business part of Houston and Galveston. Abundant also in the country where bird-boxes are put out for its convenience. Two broods are commonly raised in this latitude.

57. *Petrochelidon lunifrons*, Lawr. CLIFF SWALLOW.—Seen in great numbers during September, but does not breed in this region.

58. *Hirundo erythrogastra*, Bodd. BARN SWALLOW.—Large numbers seen in the latter part of August, but not found breeding.

59. *Tachycineta bicolor*, Cab. WHITE-BELLIED SWALLOW.—Common during migrations. A few observed in summer on the borders of woods.

60. *Cotyle riparia*, *Boie*. BANK SWALLOW.—A few pairs remain to breed in such localities as the banks of Buffalo Bayou and Galveston Bay.

61. *Stelgidopteryx serripennis*, *Bd.* ROUGH-WINGED SWALLOW.—A very abundant summer resident. Often nests under the roofs of sidewalks and on old buildings in Houston, but is more a companion to the preceding on the high banks on Buffalo Bayou and Galveston Bay.

62. *Pyranga rubra*, *Vieill.* SCARLET TANAGER.—A moderately common bird during the migrations. Arrives from the South about April 15 and passes without lingering to its more northern breeding range.

63. *Pyranga æstiva*, *Vieill.* SUMMER REDBIRD.—A common summer resident, particularly in oak woods. It is an elegant species, as are all the members of this family, but is more retired in its habits and quicker and more restless in its motions than the preceding. The song is more varied, louder, and wilder. The nest is usually built on the horizontal branch of an oak, from seven to twenty feet above the ground. It is a very open-worked inartificial structure, and the eggs cannot with certainty be distinguished from those of the Scarlet Tanager.

64. *Astragalinus tristis*, *Cab.* GOLDFINCH.—A very abundant winter sojourner. Feeds almost entirely on the seeds of the sycamore or button-wood (*Platanus occidentalis*).

65. *Chrysomitris pinus*, *Bon.* PINE FINCH.—A somewhat rare winter sojourner.

66. *Passerculus savanna*, *Bon.* SAVANNA SPARROW.—Common resident throughout the year. Breeds on the low grassy prairies, but the nest is difficult to find.

67. *Poocetes gramineus*, *Bd.* GRASS FINCH.—Only to be found during migrations. None remain, so far as I know, to winter or to breed.

68. *Coturniculus passerinus*, *Bon.* YELLOW-WINGED BUNTING.—Seen occasionally during the winter months.

69. *Ammodromus caudacutus*, *Sw.* SHARP-TAILED FINCH.—Observed near the coast of the Gulf of Mexico and Galveston Bay. Doubtless breeds.

70. *Chondestes grammicus*, *Bon.* LARK FINCH.—This interesting, lively bird is the most common of its family in all suitable localities, that is, on the prairies, near woods. Departs for the South late in September and early in October; arrives from his winter quarters again in April. Breeds in May, June, and July, and two or even three broods are raised yearly. Nests in gardens on mulberry-trees, in the corners of rail-fences, in cotton fields on the ground, but most commonly on a low horizontal branch of an oak densely covered with *Tillandsia*, on the borders of woods, where they are exceedingly difficult to discover. After breeding-time the birds assemble in large flocks.

71. *Zonotrichia albicollis*, *Bon.* WHITE-THROATED SPARROW.—Rare and occurs only in winter.

72. *Zonotrichia leucophrys*, *Sw.* WHITE-CROWNED SPARROW.—Abundant in winter.

73. *Zonotrichia gambelli intermedia*, *Ridg.* GAMBEL'S FINCH.—Not uncommon in winter.

74. *Spizella socialis*, Bon. CHIPPING BIRD.—Abundant in October and November, and again in March.

75. *Spizella pallida*, Bon. CLAY-COLORED BUNTING.—Abundant in winter near thickets and in fields with brier-patches.

76. *Spizella pusilla*, Bon. FIELD SPARROW.—Not uncommon during winter.

77. *Junco hiemalis*, Sclat. COMMON SNOWBIRD.—Abundant winter visitor.

78. *Melospiza fasciata*, Scott. SONG SPARROW.—Common during the winter months.

79. *Melospiza lincolni*, Bd. LINCOLN'S SPARROW. Common in winter in the thick undergrowth on the borders of woods.

80. *Peucaea cassinii*, Bd. CASSIN'S FINCH.—A common summer resident on the open grassy prairies. It runs like a mouse through the grass, and is very shy and difficult to observe. A nest I never discovered.

81. *Pipilo erythrophthalmus*, Vieill. GROUND ROBIN.—A rare summer resident. A few pairs breed in the woods on Spring Creek.

82. *Calamospiza bicolor*, Bon. LARK BUNTING.—Abundant in winter on the prairies.

83. *Euspiza americana*, Bon. BLACK-THROATED BUNTING.—A common summer resident. Breeds abundantly in all the prairie districts.

84. *Cardinalis virginianus*, Bon. CARDINAL GROSBEEK.—This well-known bird is the most abundant of the family and resident throughout the year.

85. *Guiraca caerulea*, Sw. BLUE GROSBEEK.—Regularly distributed summer resident, but nowhere abundant. Nests discovered always in brier-patches in fields, on road-sides, and on the border of woods.

86. *Cyanospiza ciris*, Bd. PAINTED FINCH.—Inhabits with the preceding similar localities. Very common from April to October. Nest usually in blackberry-bushes, but always well hidden and not easy to find. These birds are very shy and exceedingly quick in all their motions.

87. *Cyanospiza cyanea*, Bd. INDIGO BIRD.—Observed only during the migrations. None I think remain to breed.

(To be concluded.)

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## ON THE SESAMOID AT THE FRONT OF THE CARPUS IN BIRDS.

BY J. AMORY JEFFRIES.

IN the Bulletin for October, 1881, is a paper by Dr. Shufeldt entitled "On the Ossicle of the Antibrachium as found in some of the North American Falconidæ," in which the author describes

the sesamoid ossicle at the distal end of the radius in the Marsh Hawk (*Circus hudsonius*) as a new bone. Dr. Shufeldt says: "It does not seem possible that a bone the size of one which I am now about to describe could have been entirely overlooked by ornithologists, yet after a careful perusal of such parts of the works of the most prominent writers, as refer to the skeletology of the upper extremity I fail to discover the barest mention as to the existence of any such an one." Now this bone was figured, as it occurs in *Aquila fucsa*, by Milne-Edwards in his famous work on the Fossil Birds of France, the publication of which began in 1866, so that the bone as it occurs in the *Falconidæ* can scarcely be considered unknown to anatomists. The "os prominens" as it occurs in the *Falconidæ* is a modification of the sesamoid ossicle which very often occurs in the tendon of the tensor petagii longus where it passes over the carpus;\* its function here being that of a simple sesamoid over the carpus. In many of the *Falconidæ* † this sesamoid becomes bound to the distal end of the radius, and lengthened out at right angles to the long axis of that bone, as figured by Dr. Shufeldt. By this means the function of the ossicle becomes very much altered. It no longer slides over the carpus, but serves, since the tendon of the extensor petagii longus includes only its free end, to keep that tendon off the carpus, thus avoiding friction at the joint. Again, since the ossicle attains considerable length,—6 centimeters (millimeters?) according to Dr. Shufeldt in *Circus*,—it materially alters the action of the extensor petagii longus so that it tends much more to extend the hand and draw the thumb away from the index. In this way the extensor petagii longus seems to antagonize the slip of the flexor longus digitorum sublimis, and since its tendon is elastic, owing to the amount of yellow fibrous tissue in it, the action must be to a considerable degree automatic.

My views of the functions of this ossicle are, it will be seen, very different from those of Dr. Shufeldt, who considers it to protect the carpus and greatly increase the area of the wing. This bone, standing up as it does on the anterior edge of the

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\* This bone is described in Mivart's "Lessons in Elementary Anatomy," p. 320, fig. 289; and by Alix in his "Essai sur l'Appareil locomoteur des Oiseaux," p. 403. Being out of town fuller references cannot be given.

† In his "Essai sur l'Appareil locomoteur des Oiseaux," Alix figures (pl. II. fig. 12) the carpus of a Kestrel with a simple sesamoid.



wing, would seem to be particularly liable to injury, sufficient, we should think, to offset the amount it may protect the compact carpals below. The extra area covered by the wing on account of the ossicle is easily measured. It is simply the area of a triangle, which has for its base the difference in altitude between the process of the metacarpus and the sesamoid ossicle, 3 millimeters say, and for its altitude the distance between the carpus and the origin of the extensor petagii longus, say 2.5 decimetres. Absolute measurements cannot be given since no Hawks are to be got in Boston at present. So the entire increase of area would be 3.75 square centimetres, and this increase is at the base of the wing, where it would least increase the resistance of the wing. This difference becomes quite small in the ratio  $\sqrt[3]{\frac{2a}{\text{weight}}}$  where  $a$ ,

the area of one wing, represents hundreds of square centimeters. Yet the ratio is that of the supporting power of the wing to the weight of the body, other things being equal. In the above calculation it is assumed that Dr. Shufeldt meant millimeters not centimeters,\* when giving the dimensions of the "os prominens."

To sum up, the bone serves: (1) To keep the friction of the extensor petagii longus muscle off the carpus. (2) To increase the power of that muscle to abduct the thumb. (3) To slightly increase the supporting power of the wing. (4) To protect the carpus (?).

Here it may not be improper to state that during the winter of 1880-81, the writer *showed a specimen* of the carpus of *Accipiter fuscus*, and explained his views as here stated of the function of the "os prominens," at a meeting of the Nuttall Ornithological Club.

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## NOTES ON SOME OF THE BIRDS OBSERVED NEAR WHEATLAND, KNOX CO., INDIANA, IN THE SPRING OF 1881.

BY ROBERT RIDGWAY.

Monteur's Pond, situated about ten miles east of Vincennes and two miles west of the village of Wheatland, on the O. & M. R. R., is of considerable extent, being about nine miles long by

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\* [See Erratum on p. 64 of this issue.—EDD.]

a mile in average width. It is rather a swamp, however, than a pond, probably less than half its area being open water, the remainder filled with trees, chiefly willows (*Salix nigra*) averaging 50-60 feet high, mixed in places with a larger growth, chiefly ashes (*Fraxinus americana*, *F. sambucifolia* and *F. pubescens*), red maple, and swamp cottonwood (*Populus heterophylla*), the latter chiefly around the margin of the pond, where grow also swamp, white, and water oaks, sweet gums, and an occasional catalpa (*C. speciosa*). The surrounding country, where not cleared, consists chiefly of original forest, of various oaks and hickories, "poplar" (*Liriodendron*), beech, elm, and other trees in great variety, coniferous species being wholly absent.

The pond is never very deep, probably nowhere or at any time exceeding four feet, and in seasons of drouth becomes absolutely dry, then forming an excellent pasturage for the stock of the neighboring farmers. Even when filled with water, the latter is, in the season of vegetable growth, entirely hidden by a luxuriant growth of aquatic plants, rendering the passage of a boat, of any description, impossible, while numerous muskrat holes and the intricate submerged stems render wading difficult and fatiguing in the extreme. For these reasons the pond was but slightly explored, while it was wholly neglected after the use of a boat became out of the question. I am therefore quite ignorant as to what species may have been breeding in the recesses of the pond, my investigations having been wholly confined to the surrounding fields and woodland, the northern portion of the pond and its immediate vicinity having been the scene of my ornithological investigations from April 15 to May 27.

Notwithstanding the very unusual lateness of the season I found on my arrival (April 15) that many of the migratory birds had preceded me, but subsequent arrivals were carefully noted up to May 6, and are presented herewith.

April 15. Prairie Warbler (*Dendroica discolor*).

April 17. Yellow-throated Warbler (*Dendroica dominica albilora*), Yellow-throated Vireo (*Lanius flavifrons*), Least Flycatcher (*Empidonax minimus*).

April 18. Prothonotary Warbler (*Protonotaria citrea*), Canada Flycatching Warbler (*Myiodiocetes canadensis*), Blue Yellow-backed Warbler (*Parula americana*), Scarlet Tanager (*Pyrrhula rubra*), Summer Redbird (*P. æstiva*), Lark Finch (*Chondestes grammica*), Summer Yellow-

bird (*Dendroica aestiva*), Maryland Yellow-throat (*Geothlypis trichas*), White-eyed Vireo (*V. noveboracensis*), Wood Thrush (*Hylocichla mustelina*), Black-throated Green Warbler (*Dendroica virens*), Indigo Bird (*Passerina cyanea*).

April 19. Great-crested Flycatcher (*Myiarchus crinitus*), Kingbird (*Tyrannus carolinensis*), Catbird (*Galeoscoptes carolinensis*), Pine-creeping Warbler (*Dendroica pinus*).

April 20. Golden-crowned Thrush (*Siurus auricapillus*), Kentucky Warbler (*Oporornis formosa*).

April 21. Red-eye Vireo (*Vireosylva olivacea*), Tawny Thrush (*Hylocichla fuscescens*).

April 22. Yellow-breasted Chat (*Icteria virens*).

April 23. Blue-winged Yellow Warbler (*Helminthophaga pinus*).

April 24. Warbling Vireo (*Vireosylva gilva*), Ruby-throated Humming Bird (*Trochilus colubris*), Baltimore Oriole (*Icterus galbula*), Chestnut-sided Warbler (*Dendroica pennsylvanica*), Worm-eating Warbler (*Helminthotherus vermivorus*), Nighthawk (*Chordeiles popetue*).

April 25. Rose-breasted Grosbeak (*Zamelodia ludoviciana*\*), Blue Warbler (*Dendroica caerulea*\*), Hooded Warbler (*Myiodiodes mitratus*), Yellow-billed Cuckoo (*Coccyzus americanus*).

April 26. Black-throated Bunting (*Spiza americana*), Yellow-winged Sparrow (*Coturniculus passerinus*), Wood Pewee (*Contopus virens*), Oak-woods Sparrow (*Peucaea aestivalis illinoensis*).

April 30. Bay-breasted Warbler (*Dendroica costanea*), Long-billed Marsh Wren (*Telmatorhynchus palustris*).

May 2. Black-throated Blue Warbler (*Dendroica caerulescens*), Black-and-yellow Warbler (*D. maculosa*), Chestnut-sided Warbler (*D. pennsylvanica*), Red-poll Warbler (*D. palmarum*).

May 3. Blackburnian Warbler (*D. blackburniae*).

May 6. Nashville Warbler (*Helminthophaga ruficapilla*), Cape May Warbler (*Perissoglossa tigrina*), Mourning Warbler (*Geothlypis philadelphia*).

May 7. Tennessee Warbler (*Helminthophaga peregrina*).

Among the migratory species which had already arrived by the 15th were the Large-billed Water Thrush (*Siurus motacilla*), numbers of which were heard singing in the swamp, the Black-and-white Creeper (*Mniotilta varia borealis*), Blue-gray Gnatcatcher (*Polioptila caerulea*), and a few others.

The nesting season began much later than usual, as the following list, of the earliest date on which the eggs of any species were obtained, will show.†

\* These all common on the date when first observed.

† The difference between the season just passed in the arrival and time of nesting of the birds, may be illustrated by the fact that in the spring of 1880, *Setophaga ruticilla* was noted near Wheatland April 1, while in the spring of 1878, eggs of *Protonotaria citrea* were obtained near Mt. Carmel April 27.

April 27. Yellow-crowned Night Heron (*Nyctherodius violaceus*).

April 30. Hairy Woodpecker (*Picus villosus*), two sets; Grass Finch (*Poæcetes gramineus*).

May 2. Field Sparrow (*Spizella pusilla*), Chewink (*Pipilo erythrophthalmus*).

May 9. Redbird (*Cardinalis virginianus*).

May 18. Red-eyed Vireo (*Vireoslyvia olivacea*).

May 19. Prothonotary Warbler (*Protonotaria citrea*), Wood Thrush (*Hylocichla mustelina*).

May 20. Acadian Flycatcher (*Empidonax acadicus*).

May 22. Yellow-breasted Chat (*Icteria virens*), Maryland Yellowthroat (*Geothlypis trichas*), Indigo Bird (*Passerina cyanea*), Black-billed Cuckoo (*Coccyzus erythrophthalmus*).

May 24. Green Heron (*Butorides virescens*).

Although situated about 20 miles north and the same distance east of Mt. Carmel, the bird-fauna was entirely the same, allowing for differences in the character of the country, the environs of Wheatland being much less varied, and therefore not such as to attract so great a variety of species. Nearly all the characteristic summer birds found further south were abundant near Wheatland, however, even *Peucaea illinoensis* occurring there. Among the more numerous species were the Cerulean, Blue-winged Yellow, Kentucky and Prothonotary Warblers, all of which were quite as numerous as near Mt. Carmel. At the time of my arrival, the most abundant bird was probably the Cardinal Grosbeak, it being no unusual sight to see several males at one time along the railroad track, picking up grain dropped from passing cars, while the swamp and surrounding woods were filled with their sweet but monotonous whistlings. Later in the season, however, other species became rather more numerous, it being difficult to decide between the Redstart and Red-eyed Vireo, as to first rank in point of numbers. Other species almost as well represented as those mentioned, were the Red-headed Woodpecker, Tufted Titmouse, Blue Jay, and Red-winged Blackbird, and, for a brief season, the Rose-breasted Grosbeak and Cedarbird. Hawks were very plentiful, especially the Red-shouldered and Red-tailed, and on one occasion eight of the former (all adults) were observed soaring about, near together, uttering their clamorous cries. Barred Owls were exceedingly numerous among the trees growing in the swamp, and at night afforded much amusement by their "family squabbles." Ducks

and Geese which had been very plenty on the pond during the winter, had gone northward prior to the middle of April, except a few Mallards, Shovellers, and Blue-winged Teal, which remained until about the end of the month, as did also multitudes of Coots (*Fulica americana*).

The following list of course includes only a small proportion of the total number of species observed.

GRAY-CHEEKED THRUSH (*Hylocichla aliciae*).—The exact date of arrival of this species was not noted, but was somewhere near the 20th of April. During the last week of April and the first three weeks of May it was very common, perhaps more so than any other of the small Thrushes. Specimens were shot May 23, and others were observed as late as the 28th of that month, the date of my departure.

TAWNY THRUSH (*Hylocichla fuscescens*).—Arrived April 21 and remained until toward the last of May. Less common than *H. aliciae* but frequenting the same localities and having nearly identical manners.

BEWICK'S WREN (*Thryomanes bewicki*).—Rather common, found only about the out-buildings of farms and in the village.

HOUSE WREN (*Troglodytes aëdon*).—Less common than Bewick's Wren, and noticed only about brush-heaps and along old fences.

PROTHONOTARY WARBLER (*Protonotaria citrea*).—Very abundant among the "elbow-brushes" (*Cephalanthus occidentalis*) and willows in the pond, nesting in hollows of the latter.

BLUE-WINGED YELLOW WARBLER (*Helminthophaga pinus*).—Very abundant among the undergrowth in thick woods, chiefly in the bottoms.

GOLDEN-WINGED WARBLER (*Helminthophaga chrysoptera*).—Not uncommon for a few days during the early part of May.

TENNESSEE WARBLER (*Helminthophaga peregrina*).—As usual, very numerous for several days, arriving May 7.

NASHVILLE WARBLER (*Helminthophaga ruficapilla*).—Rather rare during the middle portion of May, arriving about the 6th.

CAPE MAY WARBLER (*Perissoglossa tigrina*).—Probably not uncommon, four specimens being obtained, all shot from the top branches of tall trees, and not recognized until after being shot.

BLACK-AND-YELLOW WARBLER (*Dendræca maculosa*).—Much the most abundant of the migratory species.

BAY-BREASTED WARBLER (*Dendræca castanea*).—Rather common for a few days.

BLUE WARBLER (*Dendræca cærulea*).—Very abundant summer resident, first noticed about the 25th of April. Diligent search failed to discover a single nest, though pairs evidently having nests were met with on every hand through the woods.

YELLOW-THROATED WARBLER (*Dendræca dominica albilora*).—Unaccountably rare, only two having been obtained, and one or two others

heard. I am at a loss to account for the scarcity of this species, unless it be the rarity of sycamore (*Platanus*) trees in the locality under consideration.

Since there is evidently a general misapprehension of the characters distinguishing this race from true *D. dominica*, it may be as well to state here that the latter is larger, with a *constantly and very decidedly longer bill*, while the yellow over the lores is *never absent*. Var. *albilora* frequently has the yellow over the lores almost as distinct as in typical *dominica*, but the bill is always much smaller, and somewhat differently shaped.

PINE-CREEPING WARBLER (*Dendroica pinus*).—Rather rare.

PRAIRIE WARBLER (*Dendroica discolor*).—Heard singing among the bushes in an old field on the day of my arrival, and frequently afterward.

CONNECTICUT WARBLER (*Oporornis agilis*).—Not uncommon about the middle of May, but very shy. Frequented the borders of the swamp, and escaped into the thick button-bushes when surprised.

KENTUCKY WARBLER (*Oporornis formosa*).—One of the most abundant of the summer residents.

MOURNING WARBLER (*Geothlypis philadelphia*).—Became suddenly very common May 6. Frequented chiefly brush-piles and old fences. Most of the specimens observed were males in fine plumage.

BLACK-CAPPED YELLOW WARBLER (*Myiodioctes pusillus*).—Rare during migration.

CANADA FLYCATCHING WARBLER (*Myiodioctes canadensis*).—One of the most numerous of the migratory species; first noted April 18, but not common until a week later.

HOODED WARBLER (*Myiodioctes mitratus*).—Rather common in deep woods, but much less so than in the vicinity of the Cypress swamp, further south.

SOLITARY VIREO (*Lanivireo solitarius*).—Rare.

CEDARBIRD (*Ampelis cedrorum*).—Exceedingly numerous among the willows in the swamp, where feeding upon the larvæ of *Diabrotica 12-maculata* infesting these trees.

SUMMER REDBIRD (*Pyrranga æstiva*). Rather common, but owing to the comparative absence of high, dry woods, much less so than near Mt. Carmel. A female, killed at the same shot with her mate, resembled the male except in the tint of the red, which was of a brick-red rather than vermilion, the male also being in the parti-colored plumage of the immature bird, the red occupying, in both male and female, one-half or more of the plumage. The ovaries of the female were well developed.

GRASS FINCH (*Poæcetes gramineus*).—Common in the meadows, a nest with four eggs being taken April 30.

LARK FINCH (*Chondestes grammica*). Rather common, chiefly in fields near roadsides.

WHITE-CROWNED SPARROW (*Zonotrichia leucophrys*).—Became common about the middle of May.

WHITE-THROATED SPARROW (*Zonotrichia albicollis*).—Very abundant up to the middle of May, and a female was started among some bushes

near the edge of the swamp about the 27th or 28th of the month, her actions and notes strongly suggesting a nest in the vicinity, but I was unable to discover one.

FIELD SPARROW (*Spizella pusilla*).—A very common bird. Remarkable variations were noticed in the song of this species, several individuals repeating the usual song three times without stopping. Another had such peculiar notes that it was followed and shot for a strange bird.

OAK-WOODS SPARROW (*Peucaea aestivalis illinoensis*).—Rare, and observed only on one occasion, on the 26th of April. The locality was a "woods pasture," about one-half cleared of trees, with occasional old logs and brush-piles on the open portion, and plenty of dead standing trees, the ground high and rolling. Immediately upon sighting the locality I thought of this bird, and at almost the same instant heard one sing. This one was shot, as he sat upon a brush-pile. Two or three others were heard at a distance, but I failed to discover them.

LINCOLN'S SPARROW (*Melospiza lincolni*).—Very abundant about brush-piles in swampy clearings.

CARDINAL GROSBEEK (*Cardinalis virginianus*). By far the most numerous of the resident *Fringillidae*, and one of the most abundant of all birds. It was a very common thing to hear several males singing at the same time, and I once saw three males and two females near together on the railroad track, picking up grain scattered from the cars.

ROSE-BREASTED GROSBEEK (*Zamelodia ludoviciana*).—Exceedingly common during the greater part of the month of May. The first were seen April 25. They were most numerous among the willows in the swamp, engaged in feeding upon a small green beetle (*Diabrotica 12-maculata*) which infested the trees. They were also common in the sugar-maple groves, and were in full song during their stay.

BLUE GROSBEEK (*Guiraca caerulea*).—A single specimen seen but not obtained (date forgotten).

BRONZED GRACKLE (*Quiscalus purpureus aeneus*).—Very numerous, breeding among the willows in the swamp. The "love note" of this bird is decidedly more metallic and more musical than that of *Q. purpureus*.

RED-HEADED WOODPECKER (*Melanerpes erythrocephalus*).—Much the most numerous of the Woodpeckers.

BARRED OWL (*Strix nebulosa*).—Exceedingly numerous, the swamp resounding at night with their hootings.

COOPER'S HAWK (*Accipiter cooperi*).—Common, breeding.

RED-SHOULDERED HAWK (*Buteo lineatus*).—Much the most numerous of the Hawks. On one occasion eight adults were observed circling together overhead, all uttering their clamorous cries.

MOURNING DOVE (*Zenaidura carolinensis*).—Abundant. All the specimens shot had the ends of the toes frozen off, showing that they had remained during the past severe winter.

WILD TURKEY (*Meleagris gallopavo americana*).—Common. Scarcely a day but what one or more were seen, and on one occasion a flock of

fourteen was met with. When surprised they fly into the swamp, where, alighting on the trees, they are secure from pursuit. The inhabitants pay no attention whatever to the game laws, and it is owing entirely to the safe retreat afforded by the swamp that the Turkeys have not been more nearly exterminated.

VIRGINIA QUAIL (*Ortyx virginiana*).—Almost exterminated by the severe winter of 1880-81.

GREEN HERON (*Butorides virescens*).—Abundant. A small colony had their nests in a second-growth thicket, some distance from the swamp. The nests (seven in number) were placed in saplings at 12-15 feet from the ground, and, with two exceptions, contained five eggs each.

YELLOW-CROWNED NIGHT HERON (*Nyctherodius violaceus*).—Abundant, a colony of perhaps a hundred pairs having their nests among the tall ash and sweet-gum trees in a creek bottom, near the edge of the pond. The nests were mostly at a considerable height, and few of them readily accessible. They had just begun to lay, and were frightened away from the locality during a "wet spell" by squirrel hunters. A female was shot from her nest April 27, and a perfect egg cut from her oviduct. Several fine specimens of the bird were secured, and it was noticed that the delicate, almost luminous, yellowish buff of the forehead very soon faded.

AMERICAN WOODCOCK (*Philohela minor*).—Common, breeding.

SOLITARY SANDPIPER (*Rhyacophilus solitarius*).—Common, and undoubtedly breeding, about small ponds in the woods.

SORA RAIL (*Porzana carolina*).—Common among the sedges in the swamp.

FLORIDA GALLINULE (*Gallinula galeata*).—Probably common in the swamp. A fine specimen with its neck broken was picked up on the railroad track near the depot in Vincennes, having been killed by flying against the telegraph wires.

AMERICAN COOT (*Fulica americana*).—Exceedingly numerous in the swamp during latter half of April and early part of May, but toward the last of the latter month the greater part had disappeared.

MALLARD (*Anas boscas*).—Very numerous at the time of our arrival and for a week or two afterward. A few pairs are said to breed in the swamp.

SHOVELLER DUCK (*Spatula clypeata*).—Much the most numerous of the Ducks at the time of my arrival (April 15).

BLUE-WINGED TEAL (*Querquedula discors*).—Abundant, even up to the latter part of May, and undoubtedly breeding.

SUMMER DUCK (*Aix sponsa*).—Common and breeding in the swamp.

HOODED MERGANSER (*Lophodytes cucullatus*).—More common than *A. sponsa*, breeding, like that species, in hollow trees in the swamp.

THICK-BILLED GREBE (*Podilymbus podiceps*).—Very common in the swamp, where it was breeding.

At the time of my arrival the Ducks had mostly departed for the North, while the Geese had entirely disappeared. Both had passed the winter in



the swamp, in immense numbers. A thorough exploration of the swamp would no doubt have added largely to the list of Water Birds, but I could not afford the time and labor necessary to accomplish even a partial exploration after the birds had begun breeding.

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NOTES ON THE HABITS AND CHANGES OF PLUMAGE OF THE ACADIAN OWL (*NYCTALE ACADICA*), WITH SOME ADDITIONAL RECORDS OF ITS BREEDING IN MASSACHUSETTS.

BY WILLIAM BREWSTER.

In the Bulletin for July, 1881, I gave an account of the breeding of the Acadian Owl at Tyngsboro', Massachusetts, with a description of a set of eggs taken there by Mr. Perham on April 5. Early in June of the same season Mr. Perham sent me a brood of four young Saw-whets which he had taken from the nest about the 15th of the preceding month. They were all in the plumage of *N. "albifrons,"* and showed little individual variation, save in respect to size, the two females being slightly larger than their brothers. In their fresh, silky feathering they were beautiful little creatures, the warm sepia-brown of the upper parts harmonizing well with the rich fulvous beneath, and their white foreheads showing in strong contrast with both. Nor were their manners less engaging than their plumage, for, unlike most Owls, they were perfectly gentle from the first, never attempting to bite or scratch those who handled them. With each other they were really affectionate, often going through a caressing performance with their bills, and showing a mutual forbearance at meal-times which was very pleasing. They eat all kinds of meat with avidity, but seemed especially fond of mice. The latter were invariably skinned and the flesh torn in shreds and devoured, the skins being swallowed afterwards as dessert. I often saw them eject those peculiar pellets of bones, fur, and other indigestible fragments which all Owls and many Hawks are in the habit of depositing

about their haunts. The operation was a peculiar one. The Owl would gape several times, then the head would be violently shaken sideways, and finally the pellet, coated with mucous, would shoot forth, frequently falling several inches in front of the spot where the bird was sitting. After it was all over the little fellow assumed an expression of relief and contentment which was very comical.

Although not less grave and solemn than other Owls, their movements were much more animated and restless. They were continually flying or hopping from place to place, even in the daytime, and they had a frequent habit of oscillating the head, at the same time lengthening and shortening the neck. This was apparently done for the purpose of fixing the exact position of some distant object, as afterwards the bird usually flew to the top of some door or book-case towards which its eyes had evidently been directed. Their only cry at this time was a shrill bat-like squeaking, which was frequently given by all four at once. Altogether they were unusually interesting pets and when the time came for preparing three of them as specimens, I found it very hard to break up the affectionate and attractive little family.

I believe it is now generally admitted by ornithologists, that the so called "*N. albifrons*" is simply the young of *N. acadica*. Indeed, Mr Ridgway satisfactorily settled this point when he cited\* the testimony of Dr. J. W. Velie of Chicago who kept a live "*albifrons*" "until it moulted and became a fine specimen of *Nyctale acadica*." But as no one seems to have published a detailed account of the transition it may be worth while to briefly record some observations made on the survivor of the brood just mentioned.

This bird was placed in a large cage where it had abundant room to fly about, and was kept well supplied with food. Through June and July there was absolutely no change in its plumage, but on August 1 I noticed a few medially spotted feathers pushing their way through the uniformly brown ones of the fore part of the crown. Through the next two weeks they gradually increased and developed until the full-face aspect of the head was that of an adult Saw-whet. At this stage there was no

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\* Baird, Brewer and Ridgway's Birds N. Am., Vol. III, p. 45.

indication of any second plumage on the other parts, but about August 15 a few streaked feathers appeared along the central line of the breast and abdomen, while a little later the moult began over the back and wings and quickly became general. Through the last two weeks of the month the new plumage gained daily, and by Sept. 1 the final stage was perfected and the bird had become a remarkably beautiful Saw-whet Owl. From this it appears that the "*albifrons*" condition is simply the first plumage, which in the Saw-whet is apparently better defined (as contrasted with the earlier downy stage and later autumnal plumage), as well as longer worn, than in most other Owls.

The specimen just mentioned is still (at the date of this writing, Dec. 1) alive and well. It has become rather wilder and less gentle than formerly, and lately has acquired a habit of swelling its plumage and snapping the bill when closely approached. Shortly after the moult it began a new cry, which is now frequently heard at night and occasionally also in the day-time. This utterance consists of a series of five or six low, chuckling but nevertheless whistled calls, which remind one of that peculiar, drawling soliloquy sometimes indulged in by a dejected hen on a rainy day. I cannot reconcile these notes with descriptions of the saw-filing ones which are supposed to have given the species its name, but they perhaps represent the unfinished performance of a young bird. The bat-like squeaking was discontinued before the bird began to whistle, and has never since been heard.

At the time of writing the article already referred to I received the impression that the nest then mentioned was the only one that Mr. Perham had found. But I have since learned that, including the two taken the present season, he has actually examined no less than seven during the past ten years, all of which occurred in or near the township of Tyngsboro'. Most of these nests were, however, broken up by red squirrels before the full complement of eggs was laid. The nesting places were usually of the artificial sort which I have already described, but occasionally use was made of a deserted Flicker's hole. Mr. Perham frequently hears the notes of Saw-whets during the month of March, and believes that many pairs breed about Tyngsboro' every season. The region is a heavily wooded one and apparently offers exceptional attractions to all kinds of Raptorial birds.

DESCRIPTION OF A NEW RACE OF *PEUCÆA RUFICEPS* FROM TEXAS.

BY NATHAN CLIFFORD BROWN.

*Peucæa ruficeps eremæca*.\* General aspect dull gray. Dorsal region grayish-ash, the feathers brownish centrally and with their shafts almost black. Top of head rufous, much admixed with grayish. A black frontlet, divided at the culmen by a white line, as in *ruficeps* and var. *boucardi*. Breast and sides clear gray. Abdomen whitish. Crissum and flanks tinged with fulvous. An indistinct, dusky maxillary stripe. Length of fresh specimen, 6.25; extent, 8.62; wing and tail about 2.75. Sexes alike.

The above description characterizes a bird very unlike *Peucæa ruficeps* both in size and in coloration. It is much larger and entirely lacks the peculiar rufous tint of the upper parts seen in *P. ruficeps*. Var. *boucardi*, which is simply a larger race of *ruficeps*, the present form therefore resembles only in size and in the distribution of its markings. Indeed it is so unlike both described races that, but for thorough investigations by Mr. Robert Ridgway which fail to justify such a procedure, I should urge the claims of the new form to specific rank. Mr. Ridgway has with great kindness made a careful comparison of several of my specimens with all accessible material bearing upon the matter, and writes me that he finds the former insufficiently differentiated from *ruficeps*, through *boucardi*, to stand as a species. An interesting fact, incidentally brought to light by Mr. Ridgway, is that of the few Mexican examples upon which Dr. Sclater based his *Zonotrichia boucardi*, those from Orizaba are apparently referable to the race I have named *eremæca*. The National Museum possesses one of the three original Orizaba skins.

The specimens above described were taken, during the months of Dec., 1879 and Jan., Feb., and March, 1880, at Boerne, Kendall Co., Texas. Some account of their habits may be found on another page of the present number of the Bulletin.

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\* *Eremæca* = ἔρημος + οὐκέω.

# ON KENNICOTT'S OWL AND SOME OF ITS ALLIES, WITH A DESCRIPTION OF A PROPOSED NEW RACE.

BY WILLIAM BREWSTER.

Since the date of its first description in 1867, Kennicott's Owl (*Scops asio kennicotti*) has remained a very rare bird, and ornithologists have gained but little additional knowledge regarding either its distribution or variations of color. The prominent characters of Elliot's type were its large size and tawny or umber-brown plumage, and as the few specimens subsequently recognized have closely resembled it, this peculiar coloring has come to be regarded as constant and diagnostic. But not long since Capt. Bendire sent me a Screech Owl from Fort Walla Walla, Washington Territory, which, although equaling *kennicotti* in size and resembling it in some other respects, was colored more nearly like *S. asio* in its gray dress. Being unable to reconcile the peculiarities of this bird with any of the standard descriptions, I set to work, at Capt. Bendire's request, to bring together a sufficiently large number of specimens to determine its identity or relationship. In this I have at length succeeded, thanks to the kind assistance of Professor Baird and Mr. Ridgway of the National Museum, Mr. Allen of the Cambridge Museum of Comparative Zoölogy, Capt. Charles Bendire, U. S. A., Mr. H. W. Henshaw, Mr. Purdie and several other friends, all of whom have been most generous in placing their material at my disposal.

The series now before me comprises about fifty specimens, and includes representatives of all the known North American forms of *Scops* except *S. flammeolus*. Among the number are two typical *kennicotti*, a fine suite of *asio*, illustrating its numerous variations of plumage, and no less than nine examples referable to the large gray form already mentioned as coming from Fort Walla Walla. A comparison of the latter with *asio* and *kennicotti* shows that while a few of the grayer specimens bear a strong superficial resemblance to *asio* in its corresponding condition, the evidence of the series as a whole points to a stronger affinity

with *kennicotti*. In regard to size, they are fully up to the standard of the latter, the difference from *asio* in this respect being so decided that the smallest male of the series is considerably larger than any female which I have from the East. Moreover, the purely gray style is represented by only a small proportion of the number, the majority being more or less tinged with tawny-rufous, in this as well as some other respects indicating evident approaches to the supposed typical characteristics of *kennicotti*. In short, the intermediate character of several of these specimens is so unmistakable that, although the transition is not completely shown, they furnish ample evidence that the gray form actually does intergrade with brown *kennicotti*.

The bearing of this testimony is not doubtful. Geographical considerations preclude our regarding the two birds as allied races, for one of the most typical examples of *kennicotti* comes from Idaho (No. 59,068 Coll. Nat. Mus., Dr. Whitehead), while I have a specimen referable to the gray condition from the coast of Oregon (Portland, Capt. Bendire), thus showing that they cannot be assigned different habitats. Clearly, then, the only alternative remaining is the assumption that *kennicotti*, like *asio*, is dichromatic, the purely gray birds from Fort Walla Walla representing the extreme of one phase, as the tawny brown type probably does that of the other. And considered in connection with its bearing on similarly variable allied forms, the hypothesis of dichromatism certainly offers a very easy and natural way out of the difficulty. Nor is there anything inconsistent in the fact that one or the other style apparently predominates in many sections of their mutual range, and in some is perhaps the exclusive representative, for a similar state of affairs is well known to obtain with other dichromatic members of this genus.\*

Assuming the preceding conclusions to be granted, the gray condition of *kennicotti* may be characterized as follows:—

**Scops asio kennicotti.** Gray phase; adult (♀, no. 6456 author's collection, Fort Walla Walla, W. T., October 22, 1881, Capt. Bendire). Ground-color above brownish-ash, darkest on the head, palest on the wings, with confused, often nearly obsolete transverse mottling and shaft-stripes of dull black, broadest and most numerous on the crown. Outer webs of scapulars and alula-coverts cream-color, the former tipped and narrowly

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\* Mr. Ridgway has found that fully ninety-five per cent of the Screech Owls of the Wabash Valley, in southern Illinois, are *red*.

margined with black. Secondaries and inner webs of primaries crossed by from six to seven bars of pale reddish-brown. Outer webs of primaries with broad, quadrate spots of brownish-white. Tail regularly but faintly barred with light reddish-brown. Feathers of the sides of head and neck thickly but minutely mottled with dusky upon a lighter ground. Lores nearly pure white. A somewhat broken facial-circle of black or chestnut spots and blotches. Beneath ashy-white, lightest on the abdomen, with numerous fine, regular, transverse bars of black and coarse shaft-stripes of the same color; the only immaculate space being that along the middle of the abdomen. Lining of wings and concealed silky plumage of sides under the wings, pale ochraceous. Tarsi, dull chestnut. Wing, 7.10; culmen, .61; tarsus, 1.77; tail, 4.10; middle toe, .75; ear-tufts, 1.45.

The above description is of a specimen representing the extreme grayish phase so far as shown by the series before me. Six others from the same locality vary a good deal in color and markings, some of them being very dark with coarse shaft-stripes, both above and below, while one or two have the dorsal surface nearly like that of *asio* in its corresponding condition. In all, however, the plumage of the under parts is somewhat different from that of *asio*, the transverse bars being usually much finer and more regular and the ground color ashy instead of clear white. These differences seem to be most strongly marked in the purely gray specimens which otherwise afford the nearest approaches to *asio*.

Among the darker birds are three which may be considered as about intermediate between the extreme brown and gray phases. The first, from Mr. Henshaw's collection (Fort Walla Walla, Nov. 7, 1880, Capt. Bendire) has the dorsal plumage dark brown with an umber cast, while the tibiæ, lining of wings, outer webs of scapulars, and numerous pairs of rounded spots forming a band or collar across the nape, are tawny-ochraceous of nearly as deep a shade as in typical brown birds. The dark shaft-stripes in this specimen are broader and blacker than in any of the others and the usual ashy cast beneath is replaced by an ochraceous one. The remaining two birds are similarly characterized but to a less marked degree. All three combine the gray and brown coloring of the respective extreme phases, precisely as do many of the eastern specimens before me, the gray and red conditions of *S. asio*.

The Portland specimen already mentioned, although in some respects an intermediate, is on the whole nearer the gray than

the brown condition. Its general coloring is essentially similar to that of Mr. Henshaw's bird, but the ground shade above is darker and the scapular spots are confined to the edges of two or three of the outer feathers, while the ochraceous wash beneath occurs only on the sides, lining of the wings, and tibiæ, the ground color of the under parts being otherwise clear ashy-white.

An unusually large female from Hellgate, Montana (No. 18,299, Nat. Mus.), which Mr. Ridgway very naturally treated as *asio* in the "Birds of North America" (Vol. III, p. 50), agrees closely with Capt. Bendire's specimens and with them must now be referred to *kennicotti*.

In the light of the present evidence it becomes necessary to rearrange the typical characters of this Owl. I accordingly offer the following diagnosis:—

**Scops asio kennicotti.** Wing, 6.40 to 7.60. Dichromatic, assuming either a gray or a tawny-brown condition. Gray phase similar to that of *asio*, but with the plumage beneath thickly barred and streaked along the median line. Brown phase characterized by a general dusky-umber or tawny-ochraceous coloring unlike that of any other North American form.\*

The following table includes the most essential measurements of all the specimens of *kennicotti* which I have examined, together with some taken at second hand, of Elliot's type of the race.

*Gray and Intermediate.*

					<i>Wing.</i>	<i>Tail.</i>
6457,	W. B.	♂ ad.	Ft. Walla Walla, W.T.	Nov. 20, 1881.	7.50	4.07
6458,	W. B.	♂ ad.	" "	Apr. 25, 1881.	7.07	4.05
82,330,	Nat. Mus.	♂ ad.	" "	Dec. 22, 1880.	7.06	4.25
6459,	W. B.	♂ juv.	John Day River, Ore.	Aug. 6, 1881.	6.92	3.65
30,624,	C. Mus.	♂ ad.	Ft. Walla Walla, W.T.	Feb. 12, 1881.	7.00	4.22
	H. W. H.	♀ ad.	" "	Nov. 7, 1880.	7.05	<i>wanting</i>
6456,	W. B.	♀ ad.	" "	Oct. 22, 1881.	7.10	4.10
18,299,	Nat. Mus.	♂ ad.	Hellgate, Mon.	—————	7.60	4.10
6466,	W. B.	ad.	Portland, Oregon.	—————	6.40	3.82

*Brown.*

4,530,	Nat. Mus.	—	Washington Ter.	—————	6.80	4.07
59,068,	Nat. Mus.	—	Idaho.	—————	6.67	3.65
59,847,	Nat. Mus.	♂ ad.	Sitka, Alaska.	March, 1866.	7.40	4.00

\* The small quadrate spots on the primaries and the indistinct tail-bands, characters which have been held as diagnostic, are both shown by my series to be inconstant and of no varietal significance.



During the course of the preceding investigation I had occasion to compare a large number of Eastern specimens of *Scops asio* with some California examples from Nicasio and Alameda County. Somewhat to my surprise, I detected several apparently constant differences which, taken in connection with the pretty definitely settled fact that the California bird is not, like *asio*, subject to dichromatism, seem to me to warrant the varietal separation of the two. I accordingly propose a new race as follows:—

***Scops asio bendirei*,\* var. nov.**

CALIFORNIA SCREECH OWL.

CH. SP. Similis *S. asioni*, sed auribus brevioribus; colore subtus magis cinerario, transversis lineis tenuioribus, pallidioribus, ac in medio haud interruptis. Nulla rubra conditione cognita.

Adult ♀ (No. 1,546, author's collection, Nicasio, California, April 24, 1877, C. A. Allen). Above essentially similar to *asio* in its gray dress. Beneath ashy-white, every where thickly barred and streaked with black; the transverse bars being fine, numerous and regular, the shaft-stripes coarse and generally distributed from the throat to the crissum, both markings occurring as thickly on the median line of the breast and abdomen as along their sides. Wing, 6.20; tail, 3.30; tarsus, 1.50; culmen, .60; ear-tufts, 1.15.

Another adult from the same locality (♀, May 18, 1878, Coll. H. A. Purdie), measures, wing, 6.22; tail, 3.18; ear-tufts, 1.05: while seven unsexed specimens from Alameda county furnish the following extremes: wing, 6.01–6.52; tail, 3.22–3.72; ear-tufts, 1.05–1.25.

The above detailed characters, so far as my series goes, are sufficient to distinguish the California specimens from any gray examples of *asio* taken in the Eastern States. The chief difference is in the ground-color and markings of the plumage beneath. In *asio* the central line of the breast and abdomen is nearly always immaculate, while there is frequently a broad, entirely unspotted gular space: in *bendirei* these parts are as thickly barred and streaked as are the sides, while the ashy tinge of the entire lower surface and the much finer character of the transverse pencilling gives the plumage a clouded appearance which, although difficult of description, is very characteristic. The ear-tufts, also, are usually shorter than those of *S. asio*.

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\* As my material is not at present sufficiently comprehensive to enable me to define the limits of distribution of this race I leave the compilation of its synonymy to those who may have better opportunities in this respect.

Among the nine examples before me there is remarkably little individual variation, much less in fact than with any equal number of *asio* which I have ever examined. The Alameda County specimens as a rule are rather more finely and faintly barred than the Nicasio ones and the ground-color beneath is of a slightly different shade, inclining more to clayey than ashy white. In one bird the under surface is decidedly dull clay-color, which is so generally and evenly distributed that there is positively no approach to clear white even on the throat, lores, forehead or abdomen. But the essential characters already given are so well maintained on the whole that the description of the one chosen as the type will apply nearly as well to them all. This uniformity is doubtless largely owing to the absence in this race of any tendency to dichromatism, for much of the variation among the dichromatic ones can be traced to the combination in varying degrees of the colors of both phases, purely colored birds of either style being, at least in some sections, of comparatively rare occurrence. It is of course to be expected that larger suites of specimens will furnish occasional aberrant ones some of which may approach *asio*; but, so far as the present material is concerned, the tendency of variation is rather towards *kennicotti* and "*tricopsis*." Indeed, as will be seen by comparing my diagnoses, the general coloring and markings of *bendirei* are so nearly like those of *kennicotti* in its extreme gray phase, that were it not for their wide difference in size it might be difficult to separate some of the specimens. That *bendirei* grades into the larger bird at the point where their respective habitats meet is shown by a specimen (No. 16,027, Nat. Mus.) from Fort Crook, Northern California, which is almost exactly intermediate in size, although more nearly like *kennicotti* in color and markings. As to our bird of the Southwest border, I believe that Mr. Ridgway is still undecided whether it really represents the *tricopsis* of Wagler or not, but he writes me that however this may turn out, he is now convinced that it intergrades with the form found over California at large and must hence be reduced to a variety of *Scops asio*. After a careful comparison of specimens I can unhesitatingly endorse this opinion, my Arizona examples of "*tricopsis*" differing from some of the more faintly barred *bendirei* only in the purer ash and sharper streaking of their dorsal plumage.

Save in cases where this fresh material has thrown new light

on old data, I have deemed it unnecessary to go over any of the ground trodden by Mr. Ridgway in his elaborate and invaluable monograph of the genus *Scops*,\* but the bearing of some of the present testimony has proved so far reaching that I venture, in concluding, to suggest the following rearrangement of the North American Screech Owls belonging to the *S. asio* group.

*Dichromatic: erythrismal phase bright rufous.*

*Scops asio.* Habitat, United States north of the Gulf States and east of the Rocky Mountains.

*Scops asio floridanus.* Habitat, Florida and Southern Georgia.

*Scops asio maccalli.* Habitat, Highlands of Guatemala, Eastern Mexico, and Valley of the Lower Rio Grande in Texas.

*Dichromatic: erythrismal phase tawny or reddish brown.*

*Scops asio kennicotti.* Habitat, Northwest Coast from Sitka to Oregon and eastward across Washington Territory into Idaho and Montana.

*Non-dichromatic: always gray in color.†*

*Scops asio bendirei.* Habitat, Coast region of California.

*Scops asio tricopsis?* Habitat, Western Mexico and the extreme southwestern border of the United States.

*Scops asio maxwellæ.* Habitat, Mountains of Colorado.

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## A RECONNOISSANCE IN SOUTHWESTERN TEXAS.

BY NATHAN CLIFFORD BROWN.

THE village of Boerne in Southwestern Texas, with its enviroing country, was the field of my ornithological labors between December 21, 1879 and April 4, 1880. Boerne is situated about thirty miles northwest of San Antonio, and less than that distance

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\* "Review of the American Species of the genus *Scops*." Proc. U. S. Nat. Mus., Vol. I, pp. 85-117.

† This arrangement leaves a large portion of the Middle Province without any characteristic representative, *maxwellæ* being an Alpine form apparently confined to the Rocky Mountains, while *kennicotti* and "*tricopsis*" respectively invade only its northern and southern borders. Our knowledge of the subject is not as yet sufficiently comprehensive to enable me to fill this gap, but all the available evidence goes to show that *asio*, at least as above defined, is not found to the westward of the Rocky Mountain range.

westerly from New Braunfels, where Messrs. Werner and Ricksecker made their collection, a few years ago.\* It lies in a country of hills and "flats," scantily watered and largely unproductive, beyond which timber and general vegetation rapidly disappear, as the westward-bound traveller nears the desolation of the Great Plains. Live-oak grows in scattering groves, the post-oak in more compact clusters, and cedar occurs in small "brakes" of some density. There are also, along the creek to which the village owes its existence, two or three small oases of deciduous trees admixed with vines, no one of them, perhaps, an acre in extent. The mesquite, which is so common on the prairies to the south and east, is not seen, but is replaced by a small variety of live-oak growing in the form of *chaparral*. Throughout my stay in it, the country had a very inhospitable and dreary aspect, on account of the almost total lack of grass of any kind; and by its absence the number of the local birds is of course materially diminished.

In presenting a list of the birds observed in this locality, I wish to call especial attention to the curious admixture of geographical races found here. Among the species which are subject to climatic variation, several are represented by two distinct varieties and with them confused and indeterminable intermediate forms. In others but one constant form is found. And in a third class the bird occurs in a varying, transitional phase of plumage which, however, occasionally becomes typical of some described race.

1. *Hylocichla unalascae* (Gm.) Ridg. DWARF THRUSH. — Uncommon resident. Not heard to sing. Several of my specimens very closely approach the variety *auduboni*. I saw nothing of the eastern *pallasi*, which I have received from Mr. Geo. H. Ragsdale, of Gainesville.

2. *Merula migratoria propinqua*, Ridg. WESTERN ROBIN. — Irregularly abundant.

3. *Mimus polyglottus* (Linn.) Boie. MOCKINGBIRD. — Rare resident.

4. *Sialia sialis* (Linn.) Haldem. BLUEBIRD. — Comparatively common during the winter. All of my specimens were in most beautiful plumage. Not one male in a dozen showed the slightest brownish edging to the feathers of the back. I was particularly struck with this in view of the fact that almost every individual in a large series collected in Alabama, in the winter of 1878, exhibited more or less of this brownish edging.

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\* See Brewster, this Bull., Vol. IV, pp. 75-80 and 91-103.

5. *Sialia arctica*, Swains. ROCKY MOUNTAIN BLUEBIRD. — Abundant winter visitor. Generally in dull plumage.

6. *Poliophtila cærulea* (Linn.) *Scl.* BLUE-GRAY GNATCATCHER. — Apparently a common summer resident. Arrived March 8.

7. *Regulus calendula* (Linn.) *Licht.* RUBY-CROWNED KINGLET. — Abundant up to the last week in March.

8. *Regulus satrapa*, *Licht.* GOLDEN-CRESTED KINGLET. — Not common. Last seen about March 22.

9. *Lophophanes atrocristatus*, *Cassin.* BLACK-CRESTED TIT. — Very abundant resident.

10. *Parus carolinensis*, *Aud.* CAROLINA CHICKADEE. — Uncommon during my stay. Usually seen in pairs.

11. *Certhia familiaris rufa* (Bartr.) *Ridg.* BROWN CREEPER. — Rare. Only two individuals observed: one Jan. 16, the other Jan. 29.

12. *Salpinctes obsoletus* (Say) *Cab.* ROCK WREN. — I obtained a single female on March 4, in a cañon of the Cibalo Creek. It was very shy and was secured with difficulty.

13. *Catherpes mexicanus conspersus*, *Ridg.* WHITE-THROATED WREN. — About three pairs were resident in the cañon above referred to. They lurked almost constantly in the interstices of the rocks, and had it not been for their delightful song would many times have entirely escaped observation.

14. *Thryothorus ludovicianus* (Gm.) *Bp.* CAROLINA WREN. — Uncommon resident.

15. *Thryomanes bewicki leucogaster*, *Baird.* TEXAN BEWICK'S WREN. — Very common resident. Sang throughout the winter.

16. *Anthus ludovicianus* (Gm.) *Licht.* TITLARK. — Abundant winter visitor. Became uncommon towards the last of March.

17. *Neocorys spraguei* (Aud.) *Scl.* MISSOURI SKYLARK. — Mr. Sennett having detected this species at Galveston,\* it was, of course, to have been expected in the present locality. Since, however, I observed no examples until the 16th of March, it is to be inferred that the bird's winter habitat lies much farther to the south than has been supposed. I met with specimens up to within a few days of my departure, but never in abundance and, I believe, all upon one "flat" containing about twenty acres.

While according to Dr. Coues† the manners and habits of this bird and the Titlark agree so closely during the breeding season, they were quite unlike at the time of my own observations. At Boerne the flight of the Skylark was peculiarly characteristic, being made slowly, at a height of but a few inches from the ground and with the regular, undulating movement of the Goldfinch. When several birds were associated together — as was usually the case — they were invariably much scattered about upon the ground, and in flight never closed ranks sufficiently to form anything

\* See Orn. Lower Rio Grande, Bull. U. S. Geol. Surv., IV, No. 1, 1878, p. 10.

† Birds Dak. and Mont., Bull. U. S. Geol. Surv., IV, No. 3, 1878, p. 561.

like a flock. The Titlarks, on the contrary, as I have also found them at the North, were birds of erratic and more rapid flight, frequently ascending to a considerable height and always preserving the semblance of a flock, however straggling their order.

18. *Mniotilta varia* (Linn.) Vieill. BLACK-AND-WHITE CREEPER. — Rather common after March 13.

19. *Helminthophaga ruficapilla* (Wils.) Bd. NASHVILLE WARBLER. — Two specimens, — March 30 and April 1.

20. *Helminthophaga celata* (Say) Bd. ORANGE-CROWNED WARBLER. — Arrived the first week in March and thereafter was the most abundant of the Warblers. One of my specimens is a partial albino, the first, I believe, that has been detected in this peculiar phase of plumage.

21. *Parula americana* (Linn.) Bp. BLUE YELLOW-BACK. — Rare migrant. Arrived March 20 in full song.

22. *Dendroeca coronata* (Linn.) Gray. YELLOW-RUMP. — An abundant winter visitor, seen throughout my stay.

23. *Dendroeca blackburnæ* (Gm.) Bd. BLACKBURNIAN WARBLER. — A single male taken March 31.

24. *Dendroeca dominica albilora*, Bd. WHITE-BROWED YELLOW-THROAT. — Uncommon migrant, first seen on March 19. The song of this variety is very different from that of its eastern analogue, and is a close reproduction of the Field Sparrow's familiar chant, without his *decrecendo* termination.

25. *Dendroeca chrysoparia*, Scl. and Salv. GOLDEN-CHEEKED WARBLER. — Previous to the capture of my Boerne specimens, there were only about seven \* skins of this elegant Warbler in existence. It was a rare bird at Boerne, and my own series was not brought up to a total of seven without special exertion. The first individual made his appearance on March 12. Within forty-eight hours from that time, under the influence of a biting norther, the mercury sank to 29° and hovered about that figure for several days. So that in his semi-tropical habitat this little bird is sometimes called upon to endure pretty severe weather. The remaining examples were taken at intervals up to March 24, after which I saw none. I found them usually in cedar brakes; never more than a few rods distant from them. They were sometimes very shy, at other times easily approached, but almost always pursued their various avocations rather silently. I did not hear the song at all, until by this I was attracted to the last specimen that I procured. The notes were an exact counterpart of the song of *Dendroeca discolor*, as I heard it in Alabama, and, indeed, for the utterances of that bird I mistook them.

By the few examples of this species hitherto existing in cabinets, the plumage of the adult male has been represented with much green on the

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\* Four specimens were known before Mr. Werner explored Comal Co., in 1878. In his article on Werner's Birds (this Bull., Vol. IV, p. 77), Mr. Brewster does not state just how many were taken.

back. Four of my five males conform to this pattern of coloration, but the fifth is in a much more beautiful dress, undoubtedly showing the male bird in full perfection. In this specimen the back is deep black, glossy and continuous. Upon close examination, faint and irregular traces of greenish are perceptible, but in much too slight a degree to materially affect the groundwork. This high state of plumage greatly enhances the bird's beauty and renders its wearer one of the handsomest of the *Sylvicolidae*.

26. *Dendroeca virens* (Gm.) Bd. BLACK-THROATED GREEN WARBLER. — An uncommon migrant, first seen on March 13. Found in hardwood growth and never in company with the preceding species. On March 25 I heard a male singing the plaintive song so familiar in northern woods.

27. *Siurus motacilla* (Vieill.) Coues. LARGE-BILLED WATER THRUSH. — A single male taken, March 25, in one of the "oases" of the creek.

28. *Lanivireo flavifrons* (Vieill.) Bd. YELLOW-THROATED VIREO. — A pair taken on March 25.

29. *Vireo atricapillus*, Woodh. BLACK-CAPPED VIREO. — One specimen, March 27. Could I have remained a few days later, other specimens would have undoubtedly been detected.

30. *Vireo noveboracensis* (Gm.) Bp. WHITE-EYED VIREO. — Common summer resident, first seen on March 13.

31. *Lanius ludovicianus excubitorides* (Sw.) Coues. WHITE-RUMPED SHRIKE. — Of irregular and uncommon occurrence. I obtained one specimen of *ludovicianus* proper.

32. *Ampelis cedrorum* (Vieill.) Bd. CEDAR BIRD. — Very irregular in its occurrence, and never common.

33. *Progne subis* (Linn.) Bd. PURPLE MARTIN. — Common summer resident. Arrived from the south, Feb. 17.

34. *Petrochelidon lunifrons* (Say) Lawr. EAVE SWALLOW. — Common summer resident. Arrived about March 20. The cañon, to which I have several times alluded, contained many nests of this bird.

35. *Hirundo erythrogastra*, Bodd. BARN SWALLOW. — Common summer resident. A single individual seen on March 4, but no others noticed until the 10th of the month when there was a general arrival.

36. *Stelgidopteryx serripennis* (Aud.) Bd. ROUGH-WINGED SWALLOW. — But two observed, — March 3 and 4.

37. *Pyranga æstiva* (Linn.) Vieill. SUMMER REDBIRD. — One specimen taken in April.

38. *Astragalinus tristis* (Linn.) Cab. GOLDFINCH. — Rather common winter visitant.

39. *Centrophanes ornatus* (Towns.) Cab. CHESTNUT-COLLARED LONGSPUR. — This and the following species apparently do not winter here. I first met with them in the second week of February. They were often associated together, sometimes with the addition of a few Horned Larks. The present species, though not common, was the more numerous and lingered later, being taken up to March 2.

40. *Rhynchophanes maccowni* (Lawr.) Bd. McCOWN'S LONGSPUR. — Uncommon migrant, taken between Feb. 11 and 21.

41. *Passerculus sandwichensis alaudinus* (Bp.) Ridg. WESTERN SAVANNA SPARROW. — Common, throughout my stay, in cultivated fields.

42. *Poœcetes gramineus confinis*, Bd. WESTERN GRASS FINCH. — Abundant in cultivated fields and less common elsewhere, throughout my stay. Several specimens were taken in plumage intermediate between this and the eastern form; and one which can hardly be referred to anything but *gramineus* proper.

43. *Coturniculus passerinus* (Wils.) Bp. YELLOW-WINGED SPARROW. — A single specimen, Feb. 14.

44. *Chondestes grammica* (Say) Bp. LARK FINCH. — Rare during the winter. A general arrival on March 11, after which it was common.

45. *Zonotrichia querula* (Nutt.) Gamb. HARRIS'S SPARROW. — Excepting two specimens taken by Mr. Dresser near San Antonio, this species has no Texas record. I found it very abundant during the winter, and in smaller numbers up to within a few days of my departure.

46. *Zonotrichia leucophrys* (Forst.) Sw. WHITE-CROWNED SPARROW. — Uncommon winter visitor.

47. *Zonotrichia gambeli intermedia*, Ridg. RIDGWAY'S SPARROW. — More common than the preceding, tarrying into March, if not later.

48. *Spizella domestica arizonæ* (Coues) Ridg. WESTERN CHIP-PING SPARROW. — Rare during the winter. More numerous after Feb. 13. This form is new to the State.

49. *Spizella breweri*, Cass. BREWER'S SPARROW. — One specimen, March 5, amongst sterile hills. Doubtless is not rare in suitable localities, of which there are none in the immediate vicinity of the village.

50. *Spizella pusilla* (Wils.) Bp. FIELD SPARROW. — Common during my stay.

51. *Junco hyemalis* (Linn.) Scl. BLACK SNOWBIRD. — Common during my stay.

52. *Junco oregonus* (Towns.) Scl. OREGON SNOWBIRD. — Uncommon. In addition to the specimens typical of the two Juncos here given, I acquired a series of very puzzling examples intermediate between the two. Such connecting links between the accepted species are perhaps best accounted for under Mr. Ridgway's theory\* of hybridization, until it can be decisively shown that they are an effect of climatic causes.

53. *Peucæa ruficeps eremœca*,† Brown. ROCK SPARROW. — This beautiful Sparrow was uncommon though apparently resident at Boerne. I found it altogether in rocky localities, usually in close proximity to the creek, but occasionally upon barren hills, a mile or more from water. It has the same shy, skulking habits which are familiar in other species of the genus, rarely taking wing, on the approach of an intruder, so long as

\* Hist. N. A. Birds, Vol. I, 1874, p. 579.

† See *antea*, p. 26.



rock, bush or weed affords a hiding place. The male's song, which I first heard on Feb. 25, is a pretty warble, not strongly accentuated, and quite unsparrowlike, — equalling neither in sweetness nor in quality of music, the beautiful chant of *P. æstivalis*. Before becoming thoroughly familiar with it, I more than once attributed it to some unknown Warbler. The call-note is extremely fine and sharp, suggesting the *eep* of *Ampelis cedrorum*.

54. *Melospiza fasciata* (Gm.) Scott. SONG SPARROW.—Rare throughout my stay. Specimens are not typical of this form, but are not referable to any of the western varieties.\*

55. *Melospiza lincolni* (Aud.) Bd. LINCOLN'S FINCH. — Arrived March 4; common thereafter.

56. *Passerella iliaca* (Merrem) Sw. FOX SPARROW.—Two or three individuals met with. This species was detected in the valley of the Brazos by Mr. L. Kumlien,† but is not included in the papers of other Texas collectors.

57. *Pipilo maculatus megalonyx* (Bd.) Coes. SPURRED TOWHEE. — To this form I refer a large series of *Pipilos*, which is by far the most remarkable of the many curious series from this locality. The relation of some specimens to restricted *maculatus* and the variety *arcticus* is indicated in the extract from Mr. Ridgway's letter, under *M. fasciata*. Other examples are links in the chain of evidence that is gradually accumulating against the specific distinctness of *Pipilo erythrophthalmus*. Indeed, I am not sure that they may not be considered as establishing the intergradation between that form and the *maculatus* group. The extreme approach to the eastern bird is seen in a single specimen, in which the white spotting, partially concealed, appears upon the outer scapulars alone, and there only in very slight measure.

58. *Cardinalis virginianus* (Briss.) Bp. CARDINAL. — Abundant resident. In a series of fifty specimens, two or three are typical, the remainder exhibiting to a greater or less degree the characters of both *virginianus* as restricted and var. *igneus*. In one specimen the black band across the culmen is hardly perceptible, but in none does the red of the forehead reach completely to the bill.

59. *Calamospiza bicolor* (Towns.) Bp. LARK BUNTING.—One specimen, in a scattering grove of post oaks, March 24.

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\* Mr. Ridgway acquiesces in the identification made of my inconstant examples of this species and *Pipilo maculatus*, in a letter from which I here make an extract: "The *Pipilos* appear to be neither true *arcticus* nor true *megalonyx*, and are almost as near (one of them at least) to *maculatus* of Mexico. They are, however, less like *arcticus* than either. . . . You will notice that one of the specimens has a very considerable admixture of *grayish* on the upper parts. Now, were this color more *olivaceous*, the specimen in question would be exactly like *maculatus*. The Song Sparrows are about equally like *M. fasciata* and *M. fallax*, but in colors appear to me to be nearer the former, as *fallax* has the markings less sharply contrasted. The specimens are, however, more like *fallax* in the grayness of the plumage. Upon the whole, I would say that they are nearer *fasciata* than *fallax*."

† See Field and Forest, Feb. 1877, p. 131.

60. *Molothrus ater* (Bodd.) Gray. COWBIRD.—A few females shot out of flocks of the following variety, in March.

60 b. *Molothrus ater obscurus* (Gm.) Coues. DWARF COWBIRD.—On Jan. 20 I shot the first females that I had observed, after which they soon became common. No males were detected until Feb. 25, but from that time both sexes were found in abundance.

61. *Agelæus phœniceus* (Linn.) Vieill. RED-WINGED BLACKBIRD.—Abundantly represented, during the winter, but by females only, so far as my observations went. The males are said by the villagers to occur rarely.

62. *Sturnella neglecta*, Aud. WESTERN FIELD LARK.—Abundant during my stay.

63. *Icterus spurius* (Linn.) Bp. ORCHARD ORIOLE.—One individual seen in April.

64. *Scolecophagus cyanocephalus* (Wagl.) Cab. BREWER'S BLACKBIRD.—Found throughout my stay; in great abundance up to the middle of March.

65. *Corvus corax carnivorus* (Bartr.) Ridg. RAVEN.—Uncommon. Usually solitary, but on Jan. 28, I noticed a flock of a dozen.

66. *Corvus frugivorus*, Bartr. CROW.—Rare.

67. *Eremophila alpestris chrysolæma* (Wagl.) Coues. MEXICAN HORNED LARK.—Abundant up to the first week of March, after which none were seen until March 27. From this time occasional individuals only were observed.

68. *Milvulus forficatus* (Gm.) Sw. SCISSOR-TAIL.—Arrived March 24, and became at once common.

69. *Myiarchus crinitus* (Linn.) Cab. GREAT-CRESTED FLYCATCHER.—One specimen taken March 30.

70. *Sayornis fuscus* (Gm.) Bd. PEWEE.—Found rather uncommonly throughout my stay.

71. *Caprimulgus vociferus*, Wils. WHIPPOORWILL.—One specimen taken April 2.

72. *Picus scalaris*, Wagl. TEXAS WOODPECKER.—An abundant resident.

73. *Sphyrapicus varius* (Linn.) Bd. YELLOW-BELLIED WOODPECKER.—Rare and irregular.

74. *Centurus carolinus* (Linn.) Bp. RED-BELLIED WOODPECKER.—The rarest species of this family: but three seen.

75. *Centurus aurifrons*, Wagl. GOLDEN-FRONTED WOODPECKER.—Uncommon resident. Unlike Mr. Sennett,\* I found it always very shy.

76. *Colaptes auratus hybridus* (Bd.) Ridg. HYBRID FLICKER.—Uncommon and of irregular occurrence. This form does not appear to have been met with in Texas limits before. The present locality is at all events exceptionally southern.

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\* See Orn. Lower Rio Grande, Bull. U.S. Geol. Surv., IV, No. 1, 1878, p. 39.

76 b. *Colaptes auratus mexicanus* (Sw.) Ridg. RED-SHAFTED FLICKER.—One specimen, taken Jan. 2. Others doubtless occurred amongst the shy Flickers which escaped my gun.

77. *Ceryle alcyon* (Linn.) Boie. BELTED KINGFISHER.—A pair seen on Feb. 18, one of which was shot by a friend on Feb. 21.

78. *Geococcyx californianus* (Less.) Bd. CHAPARRAL COCK.—Though said by the inhabitants to be usually numerous, I found it rare during my stay.

79. *Tinnunculus sparverius* (Linn.) Vieill. SPARROW HAWK.—Common winter visitant.

80. *Accipiter fuscus* (Gm.) Bp. SHARP-SHINNED HAWK.—Common winter visitant.

81. *Cathartes aura* (Linn.) Illig. TURKEY BUZZARD.—Common resident.

82. *Catharista atrata* (Wils.) Less. BLACK VULTURE.—Common resident.

83. *Zenaidura carolinensis* (Linn.) Bp. CAROLINA DOVE.—In great numbers throughout my stay.

84. *Meleagris gallopavo*, Linn. MEXICAN TURKEY.—The Boerne Hotel occasionally favored its guests with Wild Turkey obtained of ranchmen from the surrounding country, but I did not meet with the bird myself.

85. *Ortyx virginiana texana* (Lawr.) Coues. TEXAS QUAIL.—Uncommon resident. Nearly all of my specimens lack the outer one or two joints of all the toes,—a result, perhaps, of excessive cold.

86. *Ardea herodias*, Linn. GREAT BLUE HERON.—Occasionally observed.

87. *Charadrius dominicus*, Müll. GOLDEN PLOVER.—Uncommon after March 9, which was the date of its arrival.

88. *Oxyechus vociferus* (Linn.) Reich. KILDEER.—Abundant resident.

89. *Podasocys montanus* (Townsend) Coues. MOUNTAIN PLOVER.—Occurs uncommonly in the migrations. A flock of about twenty individuals encountered on Jan. 2; two specimens taken on March 15; and a flock of a dozen or more seen on March 17. They were very tame, but, from some peculiar constitutional trait, difficult to kill. This Plover was not procured in southern Texas by Mr. Sennett nor by Dr. Merrill. It was, however, met with by Mr. Dresser,\* and two specimens obtained in the State by other collectors are catalogued in the ninth volume of Pacific Railroad Reports.

90. *Gallinago media wilsoni* (Temm.) Ridg. WILSON'S SNIPE.—In the course of the winter I met with perhaps a dozen individuals, at one particular spot in the bed of the creek, where a little grass afforded partial cover. Specimens which I shot are exactly similar to eastern examples in plumage, but when freshly killed all agreed in having pale,

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\* See Ibis, 1866, p. 33.

flesh-colored legs and feet—those of the female being tinged with greenish-yellow. So far as my own experience goes, this is a peculiarity never seen in eastern Snipe, in which the legs and feet are olivaceous.

91. *Actodromas maculata* (Vieill.) Coues. GRASS-BIRD.—One specimen, March 21.

92. *Actodromas bairdi*, Coues. BAIRD'S SANDPIPER.—One specimen, March 16. A Sandpiper seen on Feb. 18, and two small flocks seen in March were also probably of this species.

93. *Totanus melanoleucus* (Gm.) Vieill. GREAT YELLOW-LEGS.—One seen, Jan. 1; three others observed in the last week of March.

94. *Rhyacophilus solitarius* (Wils.) Cass. SOLITARY SANDPIPER.—One specimen, March 25.

95. *Bartramia longicauda* (Bechst.) Bp. UPLAND PLOVER. First seen on March 22, and but few noted subsequently.

96. *Numenius longirostris*, Wils. SICKLE-BILLED CURLEW.—Two observed, Dec. 21.

97. *Numenius borealis* (Forst.) Lath. ESQUIMAUX CURLEW.—Rather common migrant, first seen on March 9.

98. *Grus canadensis* (Linn.) Temm. SANDHILL CRANE.—Solitary individuals occasionally noted.

99. *Anas obscura*, Gm. BLACK DUCK.—Small flocks rather infrequently found in the creek.

100. *Chaulelasmus streperus* (Linn.) GRAY GADWALL.—I did not detect this species until March 25, after which I found it uncommonly.

101. *Nettion carolinensis* (Gm.) Bd. GREEN-WINGED TEAL.—Rare. First seen Feb. 6.

102. *Fulix collaris* (Donov.) Bd. RING-BILLED BLACK-HEAD.—One of three shot, Feb. 27.

103. *Mergus merganser americanus* (Cass.) Ridg. GOOSANDER.—Small flocks observed in January.

104. *Plotus anhinga*, Linn. SNAKE-BIRD.—A female shot by a friend, on March 24.

To the foregoing list of species actually taken or identified beyond question, are to be added six others which I was unable to fix decisively. These are a Hawk, believed to have been *Ictinia subcærulea*, seen in pursuit of a Buzzard, on March 4; a red-tailed *Buteo* of which I saw a pair, Feb. 26; a shy, black *Buteo*, almost undoubtedly *Buteo abbreviatus*, frequently observed about the village; an Owl, apparently *Strix nebulosa*, several times scared up in an unusually dense grove of deciduous trees; a Hummer, noted a few times towards the close of my stay; and a beautiful *Larus* which hovered over the stage as it forded the creek, on my return journey to San Antonio.

*Recent Literature.*

MEMORIAL VOLUME OF GARROD'S SCIENTIFIC PAPERS.\* Garrod's work is apparently not so well known in this country as it must eventually become, forming as it does a permanent way-mark in the progress of the science, and contributing indispensable material for the solving of the most vexed problem in ornithology—we mean a sound, rational classification of birds, based on morphological data according to the theory of genetic relationship, and as such one which any considerable number of ornithologists can agree to adopt and stand by. As is well understood, those of us who have no classification of our own to advance, fall back upon some convention as make-shift, practically waiving the points at issue. As far as taxonomy is concerned, the present attitude of ornithology is thoroughly iconoclastic; but, while we agree that much of what has been set up must be upset, few claim to know what ought to replace the broken images, and fewer still agree on that point. There is nevertheless a large amount of material at hand, the soundness and utility of which no one questions; and of late years Garrod has been both indefatigable and successful in setting bricks and mortar. Of the anatomical papers in the present volume, some 73 in number, more than half relate to birds, describing conditions of the osseous, muscular, respiratory, vascular, digestive and nervous systems which appear to promise most of value in taxonomy, and discussing in candid and scientific spirit, from a vantage-ground of long experience, the bearing of the anatomical points upon classification. Of the accuracy and high rate of reliability of these papers there can be no question; they are sufficiently lucid to shine with their own light, and there is a certain “finish” about them which is truly admirable. This is seen when the author is drawing the comparisons which his extensive knowledge enables him to adduce, and summing his conclusions. These are always clean-cut and luminous, so that we know exactly where to find Garrod, whether we like him and agree with him or not. It is scarcely possible that he has been exempt from the all but inevitable tendency of the mind's eye to magnify the particular subjects there focussed for the time, and so get them more or less out of perspective of the whole range of vision; but he seems to have known and guarded against this most scrupulously, unless, perhaps the “ambiens” muscle proved too much for him. On the whole, we do not think that even the warm praise of the editor, his personal friend and admirer, is too much to say, and we quote with pleasure:

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\* In Memoriam. The Collected Scientific Papers of the late Alfred Henry Garrod, M. D., F. R. S., etc. Edited, with a biographical memoir of the author, by W. A. Forbes, B. A., etc. London: R. H. Porter: 6 Tenterden Street, 1881. 1 vol. 8vo. pp. xxvi, 538, pll. 33, frontisp. (portrait), and many cuts in text.

"Of his zoological papers indeed, the ornithological ones must probably, on account of their more novel character, and as affording entirely new data for the solution of the various problems connected with the classification of Birds, which he revolutionized, be considered of the greater importance. No future worker in that group can neglect the facts or ideas concerning it that we owe to Garrod, and they alone suffice to put his name in the very first rank of those who have ever studied these creatures, and to stamp his work on Birds as truly 'Epochmachende.'"

Garrod's numerous papers, covering the period of 1871-79, are scattered through various periodicals; and it is a subject for congratulation that they have been collected in one convenient volume, under careful editorship. At a meeting of the Zoölogical Club to consider the wish of friends to possess some permanent memorial of Garrod, it was decided, with wisdom and good taste which none can impugn, "that the most appropriate and desirable one would be the publication, in a collected form, of all the papers published by Garrod in various scientific journals and periodicals, with a portrait and memoir of the author." This decision has been ably carried into effect by Mr. Forbes, whose own contributions to the same subject already prove him to be one on whom the mantle may fittingly descend. We wish there were more work of this kind, even if not of the same highest quality, done by our own countrymen; but at present no one of them seems especially interested excepting Dr. Shufeldt, whose studies thus far possess much value and give still more promise. Noticing only two or three American names on the list of subscribers, we venture to hint that the work may be procured by others in the usual way.

We cannot of course go into any examination of these papers in an editorial notice like the present, or even adduce the leading results of the author. It must suffice to say that among them is an entirely new classification of birds, primarily based upon the ambiens. Among the more important papers we may mention those on the carotid arteries; on certain muscles of the leg (Garrod's *pièce de resistance*); on the anatomy of Pigeons, of Parrots, and of Passerine Birds; and on the trachea in *Galina*. All these are of general import, bearing on broad questions of taxonomy, as distinguished from minor papers, however valuable, in which special points are examined. The editor has done well to preserve the original pagination of the text and numeration of the illustrations for facility of citation, and the plates are said to be faithfully reproduced.—E.C.

SHUFELDT'S OSTEOLOGY OF THE NORTH AMERICAN TETRAONIDÆ.\*—This osteological memoir is, so far as we know, the most complete of any on American birds of one group. In general the descriptions, with the aid of the numerous plates, can be easily understood. In treating of the skull Dr. Shufeldt adopts the old theory that it is nothing but the modified end of the back bone, and gives a diagrammatic figure of the skull of *Centrocercus* much like that given by Owen of the Ostrich. This view will

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\* Osteology of the North American Tetraonidæ. By Dr. R. W. Shufeldt, U. S. A. Bull. U. S. Geol. and Geog. Surv. Territories, Vol. VI, No. 2, pp. 309-350, pl. V-XIII.

of course be rejected by all who do not consider the membrane and cartilage bones of the skull to be from the same source. The use of "hyoid arch" when speaking of all the tongue bones is, we think, liable to lead many young students astray; we would suggest "hyobranchial arches," or "hyoid arches."

A point of considerable interest is a small ossicle which occurs at the inner side of the II metacarpal—III metacarpal of Dr. Shufeldt's homologies of the hand—near its base. This bone is compared to the pisiform bone of the Mammalia by the author. Besides this, two proximal and two distal carpal bones are found, just as in the chick. Thus the chick and the young *Centrocerus* have the same structure of the hand except the presence of a IV metacarpus in the first and a "pisiform" in the second. We notice that the "index" is described as being composed of only one phalanx; this we believe to be an oversight of the author; at all events most of the European Gallinæ have two phalanges, the last one bearing a claw. On reference to fig. 57 it will be seen that the distal end of the first phalanx in *Centrocerus* is very large and looks as if there should be another joint. As regards the tarsus, Dr. Shufeldt has been able to demonstrate the existence of a fibulare, tibiale, and intermedium, which ultimately become ankylosed with the tibia. Dr. Shufeldt also states that as a whole the different parts of this skeleton in *Centrocerus* are slow to ankylose, thus rendering the bird an extremely favorable one for the study of the separate elements of the skeleton.

The description of the osteology of *Lanius ludovicianus excubitorides*,\* by the same author, is short, concise, and may be summed up in the statement that the skeleton of this bird is strictly Passerine. — J. AMORY JEFFRIES.

ILLUSTRATIONS OF OHIO NESTS AND EGGS.†—We are glad to record the progress of this great work, of which we have had former occasions to speak so highly. The ninth fascicle is the last which has reached us, carrying the number of plates to twenty-seven, each with its sheet or so of letter-press. The high standard of the work is on the whole maintained, although, to our eye at least, the plates lack somewhat of the peculiar attractiveness that the earlier ones had for us. It may, however, be only the charm of novelty that we miss; and there is certainly no falling off in the conscientious endeavor to unite fidelity to nature with artistic excellence in depicting these beautiful objects. Should the project be carried to completion, the work will certainly become a standard of reference. It deserves to be better known and more widely circulated than it appears thus far to have become, and we trust that time will serve to make its merit fully appreciated.

\* Osteology of *Lanius ludovicianus excubitorides*. By Dr. R. W. Shufeldt, U.S.A. Bull. U. S. Geol. and Geog. Surv. Territories, Vol. VI, No. 2, pp. 351-359, pl. XIV.

† Illustrations of the Nests and Eggs of the Birds of Ohio. Part VIII, April, 1881; Part IX, July, 1881. Pll. xxii-xxvii, fol.

The following are the plates of the two parts before us. (In No. 8) Pl. 22, *Cardinalis virginianus* (the eggs shown in their remarkable extremes of size and coloring); Pl. 23, fig. 1, *Vireo gilvus* and fig. 2, *V. olivaceus*; Pl. 24, *Zenaidura carolinensis*; (in No. 9) Pl. 25, fig. 1, *Trochilus colubris*, fig. 2, *Polioptila cærulea* (and one is interested to see that these nests are of identical orders of architecture and ornamentation, however different in materials); Pl. 26, *Spizella socialis*; Pl. 27, *Butorides virescens*.

The text continues as heretofore to consider the subjects under the formal heads of — Locality — Position — Materials — Eggs — Differential Points — Remarks; the latter head usually covering the most matter. We are glad to see that the authors now fill, as a rule, their sheets of letter-press — there is certainly enough to be said on the subject for that! The pagination of the letter press reaches p. 104 with the end of No. 9.

It is never untimely to suggest that when works published in this manner come to be bound, especially if the parts are made up in any other order than sequence of publication, the original cover-titles should be preserved; there being no intrinsic evidence, either in the text or on the plates, of dates of publication or of contents of Parts; and it may not be too early to suggest to the authors that explicit indication of these points should be given with the permanent title, contents, etc., of the finished work.—E. C.

SHUFELDT'S "THE CLAW ON THE INDEX DIGIT OF THE CATHARTIDÆ."\*—We regret being obliged to make unfavorable criticisms, but this paper contains such important errors, both in regard to the structure of birds and the literature of the subject, that some rectification seems necessary. Dr. Shufeldt describes the claw at the end of the first finger of *Catharista atrata* as a new discovery, considering that claws outside the Ostrich groups have not hitherto been described, and also states that it is a point of distinction between the Old and New World Vultures. Unfortunately Nitzsch† long ago described the claw on the first finger of birds in the following words: "Die Analogie, welche die Flügel der Vögel mit den Vorderfüßen der Säugthiere und Reptilien haben, zeigt sich auch in den Spuren von Nagel- oder Klauenbildung, welche an den Finger jener Glieder oftmals gefunden werden. Dieser Bildung macht es zugleich wahrscheinlich, dass die Urform der Flügel in der Fussform, oder doch in einer, dieser sehr ähnlichen, bestand; denn die Nägel gehören den Füßen an, sie haben im Kreise der Flügelfunkzion keine Bedeutung, und sind da wohl nur durch zweckloses Nachahmen und Ueberbleiben der Fussform." Farther on he describes the skeleton of the hand as follows: "Die Hand der Vögel hat drei Finger, 1) den Daumen, welcher (ohne das Nagelglied) aus einem Stücke, 2) den grossen Finger, der (ohne das Nagelglied) aus

\* American Naturalist, Nov., 1881, pp. 906-908.

† Osteografische Beiträge zur Naturgeschichte der Vögel. Ueber das Nagelglied der Flügelfinger, besonders der Daumen. Leipzig, 1811, S. 89.



zwei Stücken oder Gliedern, und 3) den kleinen Finger, der stets nur aus einem Stücke besteht." Since Nitzsch's memoir was written his observations have been extended, and mentioned by many anatomists, as Mæckel, in his Anatomy, by Blainville, by Selenka in Bronn's "Thiereichs," by myself in this Bulletin for 1881, by Professor Morse in the "Anniversary Memoirs" of the Boston Society of Natural History. Accordingly the claw on the first finger is anything but an unknown object. It is constantly demonstrating its existence to practical ornithologists by pricking their fingers while measuring bird's wings. That the claw is absent in the Old World Vultures is also an error if we may trust the high authority of Nitzsch, who wrote as follows: "Unter den Raubvögeln einiges Geier, Adler, Falken; aber nicht die Eulen—Am *Vultur percnopterus* ist sie ziemlich stark, ungefähr einen halb Zoll long zugespitzt und bräunlich vom Horne." In fact, a claw on the first finger is of very common occurrence, and is found, according to the authorities given above, in the *Accipitres*, *Herodiones*, *Palamedææ*, *Anseres*, *Gallinæ*, *Fulicariæ*, *Alectorides*, *Limicolæ*, *Gaviæ*, *Pygopodes*, *Crypturi*, and *Struthiones*.

Here it may not be out of place to add that a claw has also been found on the end of the second finger, by myself and Professor Morse, in certain of the Water Birds, and perhaps in some embryo Hawks: and that as a rule the claws are much more conspicuous in young than in adult birds.—J. AMORY JEFFRIES.

PAPERS ON MINNESOTA BIRDS.\*—Although the report containing these papers was not generally circulated in 1881, a copy reached us in December of that year. Dr. Hatch contributes a list of 281 species briefly annotated—usually with only a line or two to each species respecting the manner and character of its appearance in the State. In explanation of its cursory style the author states that, as we regret to learn, the original copy was destroyed by fire, "and it has been impossible to give its re-writing the measure of carefulness which the first manuscript received." The most interesting entry is that of *Querquedula cyanoptera*, which thus appears far from its recognized range.

Mr. Roberts' article treats much more fully of 52 species known to occur in the State in winter, divided into the categories of "permanent residents" (23), "winter visitants" (14), "half hardy" species (9), and "accidental" ones (6), the information given conveying a good idea of the bird-fauna at that season of the year. Doubtless owing to circumstances for which neither author is responsible, each paper bristles with typographical errors, few of which are corrected in the accompanying erratum slip. We understand that a full list will accompany the volumes as finally published.—E.C.

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\* A List of the Birds of Minnesota. By Dr. P. L. Hatch. Ninth Ann. Rep. Geol. and Nat. Hist. Surv. Minn., for 1880, 1881, pp. 361-372.

The Water Birds of Minnesota. By Thomas S. Roberts. *Op. cit.*, pp. 373-383.

FREKE ON THE BIRDS OF AMELIA COUNTY, VIRGINIA.\*—Our knowledge of the birds of Eastern Virginia is so largely inferential that Mr. Freke has done good service in publishing the results of six years' observations in Amelia County, at a point "about thirty miles south of Richmond." His list, which is freely annotated, includes 112 species. The Barn Swallow is catalogued as a spring and fall migrant; the Tree Sparrow (*Spizella montana*), as a rather uncommon winter visitor; the Field Sparrow, as resident but most common in winter; the Chipping Sparrow as arriving from the south late in March and as leaving during November; the Song Sparrow as wintering but not breeding; the Blue Grosbeak as not uncommon during the latter part of April and early in May, but, rather unaccountably, as not being found in summer; the Ruffed Grouse as plentiful in the mountains but not common in the low country, although a few regularly nest there in thick pine woods.

The author has evidently fallen into some confusion regarding the spotted-breasted Thrushes of the genus *Turdus*. Thus *T. "pallasi"* is characterized as a "resident species, apparently not migrating even in the most partial manner." In view of our very definite knowledge of the Hermit's distribution, such a statement by itself would be open to the gravest suspicion, but when we add that Mr. Freke does not mention the Wilson's, Olive-backed, or Wood Thrushes as occurring at *any season*, it is quite plain that the Hermit (*verus*) did duty as the winter bird, the Olive-backed or Wilson's Thrush filled the gap during the migrations, and the Wood Thrush was the species that "builds its clay-lined nest in the fork of some cedar or dogwood bush, at the height of eight or ten feet from the ground, and there lays its blue eggs." The statement that *Dendroica coronata* "is one of the commonest warblers in the district, and spends [a] great part of the year there," is not so easily explained; but despite the still more explicit assurance that "they come about the end of April, or the beginning of May, and remain until very late in the autumn," we cannot help thinking that some mistake was made in the identification of the individuals seen in summer.

Save in the last named instances, however, there is no reason to doubt that the author's commendable practise of "verifying my observations, as far as possible, by securing specimens and preserving skins" was conscientiously carried out, and his paper will be read with interest, not only as an exponent of the ornithology of a previously unworked section, but also as embodying a foreigner's pleasantly told impressions of many of our familiar birds.—W. B.

LANGDON'S FIELD NOTES ON LOUISIANA BIRDS.†—These notes comprise "a record of ornithological observations and collections made by

\* On birds observed in Amelia County, Virginia. By Percy E. Freke. Scientific Proceedings of the Royal Dublin Society, Vol. III, Part III. [Read Feb. 21st, 1881.]

† Field Notes on Louisiana Birds. By Dr. F. W. Langdon. Journ. Cincinnati Soc. Nat. Hist., July, 1881, pp. 145-155.

the writer during the month ending April 17th, 1881, at 'Cinclair' plantation, situated in the parish of West Baton Rouge, Louisiana, on the right bank of the Mississippi, one hundred and twenty-seven miles by river above New Orleans."

The locality is described as "flat and uninteresting . . . . The cultivated grounds are mainly comprised in a strip ranging from one to three miles in width, along the rivers and principal bayous, the remainder of the state being chiefly occupied by extensive forests and swamp lands."

The author considers the list "of quite as much interest for what it does *not* include, as for what it *does*," and comments on the apparent absence of the Catbird, Long-billed Marsh Wren, Black-and-white Creeper, Yellow-rumped, White-browed, Black-throated Green, Yellow Red-poll, and Kentucky Warblers, Large-billed Water Thrush, Redstart, Song Sparrow, and Common Pewee; to which he might with equal propriety have added the Prothonotary and Blue-winged Yellow Warblers and the Acadian Flycatcher. But we cannot believe with him that the non-occurrence, on the present occasion, of most of these species has any special significance, either as affecting their general distribution in, or usual migration through, the region of which the paper treats. The country about "Cinclair" may have been unsuited to the habits of some of them, while the early date of Dr. Langdon's departure, taken in connection with the exceptional lateness of the season, will sufficiently explain his failure to detect a number of the migratory ones which have been found near the mouth of the Mississippi by Mr. Henshaw, and which are well known to extend over the Mississippi valley at large only a few hundred miles further to the northward.

Dr. Langdon's thoroughness and energy as a field collector are, however, so well known through the medium of his valuable papers on Ohio birds, that we may rest assured that his work at "Cinclair" was well done, and the paper will be welcomed as an acceptable contribution to our knowledge of a region which has been nearly a *terra incognita* to ornithologists since the days of Audubon.—W. B.

KRIDER'S FIELD NOTES.\*—In an unpretending little pamphlet of some eighty odd pages Mr. Krider has "endeavored to describe and give the history of only those species of birds of the United States" which he has "collected and mounted," and whose nests have come under his personal observation. Had this plan been carried out with only ordinary forethought and intelligence it could scarcely have failed to result in a valuable contribution to our knowledge of North American birds, for Mr. Krider's long experience as a field collector must have afforded unusual opportunities for original investigation and observation. But a casual glance through

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\* Forty Years' Notes of a Field Ornithologist, by John Krider, Member of the Philadelphia Academy of Natural Sciences and author of Krider's Sporting Anecdotes, Philadelphia. Giving a description of all birds killed and prepared by him. Philadelphia, 1879, 8vo. pp. i-xi, 1-84.

the pages of his work is enough to show that these opportunities have been sadly neglected. Important records are given without dates and often with only a vague or inferential assignment of locality, while improbable statements and palpable errors are of frequent occurrence. In short, it is only too evident that Mr. Krider's "Notes" are the offspring of a fading memory rather than the carefully kept data of a systematic worker. Moreover, the author writes from a standpoint at least twenty-five years behind the times, and consequently ignores all the various developments affecting classification and the relationship of allied species and races. From all this chaff it is of course possible to separate some sound grain, but most of the really important records were published long ago by Turnbull, Cassin, and other writers. Of the literary execution of the present work we can say nothing favorable. It is to be regretted that the author could not have recognized his unfitness in this respect, and, as on a former occasion, have secured the services of a competent editor.—W. B.

LANGDON'S ZOOLOGICAL MISCELLANY.\*—In the last issue of its well-known "Journal," the Cincinnati Society of Natural History publishes the first of a series of articles entitled "Zoölogical Miscellany," the aim and scope of which are thus tersely defined by the editor, Dr. F. W. Langdon:—

"Under the above caption it is proposed to bring together from time to time such facts as may be deemed worthy of record, respecting the structure, the life history, or the geographical distribution of the various species of animals constituting the Ohio Valley Fauna."

The part before us includes sections on mammalogy, ornithology, herpetology, ichthyology, conchology, and entomology. In general terms, it may be said that all of these are well sustained, but in the present connection we have to do only with the one relating to birds. This contains a number of interesting notes, a large proportion of which are from the editor's pen, although a few are signed by Mr. E. R. Quick, Mr. A. W. Butler, Dr. Howard E. Jones, and other more or less well-known names. Most of these notes relate chiefly to the local presence or distribution of certain birds within the Ohio Valley, but one or two possess a wider interest. Among the latter we notice an announcement by Dr. Langdon of the detection of the Oak-woods Sparrow (*Peuceea æstivalis illinoensis*, Ridgway) near Bardstown, Nelson County, Kentucky, "about one hundred miles southwest of Cincinnati." The specimen was taken April 28, 1877, by Mr. C. W. Beckham, who referred it to Dr. Langdon for identification.

In addition to his numerous notes, the editor contributes a short but useful paper on the "Introduction of European Birds." From this it appears that "during the years 1872, '73 and '74, about nine thousand dollars were expended in the purchase and importation of European birds, their average cost to import being about four dollars and fifty cents a pair.

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\* Zoölogical Miscellany, edited by Dr. F. W. Langdon. Jour. Cincinnati Soc. Nat. Hist., Vol. IV, Dec., 1881, pp. 336-346.

According to this estimate some four thousand individuals were introduced." This great outlay was borne by the "Acclimation Society of Cincinnati" and we believe that most of the birds were turned out in the neighborhood of that city; but, according to Dr. Langdon, the experiment has practically proved a failure.

If the present instalment of "Zoölogical Miscellany" may be taken as a fair criterion of future issues, its favorable reception by naturalists is a matter of no uncertainty, and under Dr. Langdon's able editing we look to see its popularity widely extended, even though its field be restricted to the Ohio Valley.—W. B.

HOFFMAN ON THE BIRDS OF NEVADA.\*—In the present paper Dr. Hoffman has done good service to ornithology by tabulating the two hundred and fifty species and varieties of birds which he considers are entitled to a place in the avi-fauna of Nevada. The list is based partly upon the writer's personal experience in the field during the season of 1871, but mainly upon the previously published reports of Mr. Ridgway, Mr. Henshaw and Dr. Yarrow, and Dr. J. G. Cooper. It hence partakes largely of the nature of a compilation, although the author's original notes are by no means few or uninteresting.

The paper begins with a pertinent chapter entitled "Remarks on the distribution of vegetation in Nevada as affecting that of the avi-fauna" and closes with a bibliographical list of the chief publications relating to the region considered, and an excellent map of the state.

The list proper is freely annotated and the numerous and often extended quotations are always apt and interesting. The work, generally, has been so well done that we find few points open to adverse criticism. There is however an evident tendency on the author's part to swell the number of species and varieties by the enrollment of many which have been taken or observed near the borders of the state but not as yet actually within its limits. We are aware that Dr. Hoffman has some high authority for adopting this course but we are none the less inclined to deprecate it, believing that it is time enough to catalogue a species when it has actually been found within the limits treated. In the present case, however, it must be admitted that there are good grounds for supposing that most of these extra-limitals will eventually turn up in Nevada.

Dr. Hoffman's paper ranks easily among the higher class of publications to which it belongs and should find a place in the hands of every working ornithologist.—W. B.

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\* Annotated List of the Birds of Nevada. By W. J. Hoffman, M. D. Bull. U. S. Geol. and Geogr. Survey of the Territories, Vol. VI, No. 2, Sept. 19, 1881, pp. 203-256, and map.

## General Notes.

THE TUFTED TITMOUSE ON STATEN ISLAND, N. Y.—I shot a specimen of this species (*Lophophanes bicolor*) on the 24th of August, 1881, in a thick wood, a few miles south of Port Richmond, a small town on the north shore of Staten Island, N. Y.—DANIEL E. MORAN, *Brooklyn, N. Y.*

NESTING OF THE WHITE-BELLIED WREN (*Thryothorus bewicki leucogaster*).—This Wren is abundant in Northern Arizona, where I saw it and heard it singing most constantly, during the month of June, while traveling from Fort Whipple to view the Grand Cañon of the Colorado. The birds were particularly numerous in the vicinity of cañons and arroyos, and in the patches of red cedar and piñon pine that stretch away from mountain-sides to the valley ground of the Colorado Plateau. At a water-hole about midway on my journey, it so happened that my tent was pitched beneath a cedar where, as I was soon satisfied by their vehement scolding, a pair of the Wrens were protesting against such intrusion upon their privacy. In a little while, however, finding themselves unmolested they quieted down, resumed their song at intervals, and were soon after busily engaged in bringing insects to their family. Having explored a deserted Woodpecker's hole, only to find it empty, I at length saw one of the birds disappear in the hollow end of a blasted horizontal bough about eight feet from the ground. The entrance was too narrow to admit my arm, but by breaking away some of the rotten wood I at length got a glimpse of the nest, and could just put a finger over the edge of it far enough to feel the little birds. I should have despoiled the household had there been eggs; but as it was I refrained, and for a day or two was much interested in watching the happy, devoted pair, bubbling over with joyous music as they assiduously cared for their little family, now coming and going undisturbed by the group of men who shared the luxury of this fragrant cedar shade. This was June 7; returning a week afterward, the pretty spot was a "banquet hall deserted"; so that I did not hesitate to break into the bough and remove the nest. It contained two dead young ones, upon which a troop of ugly carrion-beetles were rioting and feasting. The nest was quite unlike what a House Wren's would have been under the same circumstances, having none of the trash with which these queer birds would have surrounded it; it rested upon the horizontal floor of the cavity, upon a bed of wood-mould and cedar-berries, about a foot from the ragged entrance of the hollow. It was a neat structure, about 4 inches across outside, by half as much in internal diameter, cupped to a depth of an inch and a half. Outside was a wall of small cedar twigs interlaced, and next came a layer of finely frayed inner bark strips from the same tree; but the bulk of the nest consisted of matted

rabbit-fur stuck full of feathers, among which those of the Carolina Dove were conspicuous. These latter birds are extremely abundant all over Arizona and in the dry season they are often at such straits for water as to congregate in immense flocks at the water-holes, few and far between, which alone render it possible to traverse some parts of the unblest Territory. On the morning of which I write, reveille was sounded by the clapping and whistling of a thousand eager wings, now venturing near, then frightened from the coveted water where men and animals were crowding. In other times, the Dove brought tidings of dry land; in Arizona now, where everything goes by contraries, river-sites are many, but the sight of a Dove is a surer sign of water.—ELLIOTT COUES, *Washington, D. C.*

AN ERRONEOUS RECORD OF THE ORANGE-CROWNED WARBLER (*Helminthophaga celata*) IN NEW HAMPSHIRE.—In Vol. III, pp. 96, 97 of this Bulletin, Mr. John Murdoch recorded the capture of an Orange-crowned Warbler at the Isles of Shoals, New Hampshire, by the Messrs. Bangs of Boston. I have lately had an opportunity of examining this specimen and find it to be a Tennessee Warbler (*Helminthophaga peregrina*), in the ordinary autumnal plumage. It is but just to the Messrs. Bangs to state that they are not to be held responsible for this blunder, the bird having been submitted by them to an ornithologist of some standing, one in whose determination they placed perfect confidence. Nor can Mr. Murdoch (who I believe took all his facts at second hand) be blamed for accepting the same supposed good authority.—WILLIAM BREWSTER, *Cambridge, Mass.*

ON THE GENERIC NAME *Helminthophaga*.—The change of a generic name, especially one long established, is in any case unfortunate, and in the present instance seems particularly so; yet the plain rules of zoölogical nomenclature leave no alternative. The generic name *Helminthophaga*, proposed in 1850 by Cabanis for a well-known group of American Warblers, was used in a sub-generic sense about forty-seven years previously, by Bechstein, who, in 1803 (*Taschenbuch*, p. 548), included under this name the Nightingale and Redbreast of Europe (*Luscinia philomela* and *Erithacus rubecula*); in consequence of which (no other name having, apparently, been proposed for the group in question) it becomes necessary to rename the genus so long called *Helminthophaga*. In proposing a new name, which I am very reluctant to do, I have selected the term *Helminthophila*, on account of its similarity to the one so long in use. It is proper to state here that my attention was called to this point by Dr. L. Stejneger, the eminent Norwegian ornithologist.

Leaving out *H. lawrencei* and *H. leucobronchialis*, which Mr. Brewster has pretty clearly proven to be hybrids of *H. pinus* and *H. chrysoptera*, the known species of this genus are as follows:—

1. *Helminthophila bachmani* (Aud.).
2. *Helminthophila chrysoptera* (Linn.).
3. *Helminthophila pinus* (Linn.).

4. *Helminthophila ruficapilla* (Wils.).
5. *Helminthophila virginiae* (Baird).
6. *Helminthophila celata* (Say).
7. *Helminthophila peregrina* (Wils.).
8. *Helminthophila luciae* (Cooper).—ROBERT RIDGWAY, *Washington, D. C.*

*Dendroeca palmarum* AGAIN IN MASSACHUSETTS.—The first capture of *Dendroeca palmarum* in Massachusetts was that of a single bird taken by Mr. Arthur Smith at Brookline, about the middle of October, 1878. (See note by Mr. Ruthven Deane, Bull. Nutt. Club, Vol. IV, page 60.) I have the pleasure of announcing the capture of two additional specimens. The first was taken at Cambridge, September 13, 1880, and was shot on an apple tree while in company with several other Warblers. The second was shot at Belmont, September 7, 1881, from the top of a yellow pine. The marked difference in the intensity of the yellow of the breast and under tail-coverts first attracted my attention to this bird. Never having met with *D. palmarum hypochrysea* in the autumn, I thought both birds to be of this variety until quite recently, when my friend Mr. William Brewster identified them for me and found them to be genuine *D. palmarum*.—HENRY M. SPELMAN, *Cambridge, Mass.*

*Ampelis cedrorum* AS A SAP-SUCKER.—The Cedar, or Cherry-Bird seems never to be very abundant in this section of the State; but early in the spring, when the birds first arrived from the south, I saw quite a large number of them, and observed what was to me a new habit. They resorted to the maple trees for the purpose of gathering the sap flowing from wounds made by the ice in the bark of the smaller branches. The birds would grasp a branch or twig with their claws, and partially swing themselves under it and drink the sap where it hung in drops. For a week or more these birds were so plentiful and so intent upon their sap-gathering that one was almost certain to find a flock wherever there was a group of maples. I took considerable pains to ascertain if this habit was shared by any other bird, but did not observe a single instance. In the Eastern States I have often seen squirrels drinking sap from the branches in this way, but never before saw it done by a bird.—F. E. L. BEAL, *Ames, Iowa.*

CAPTURE OF *Plectrophanes lapponicus* IN CHESTER, SOUTH CAROLINA.—Mr. Leverett M. Loomis writes me that on January 1, 1881, he shot a single individual of this species from a small flock of Shore Larks, which were feeding upon offal in a barn-yard. There appears to be no previous record of the occurrence of this species in South Carolina.—J. A. ALLEN, *Cambridge, Mass.*

OCCURRENCE OF *Coturniculus lecontei* IN CHESTER COUNTY, SOUTH CAROLINA.—Near the town of Chester, S. C., on the dividing ridge between the Broad and Catawba Rivers, there is an "old-field" of some



two hundred acres that has been lying out, until recently, for a number of years. Here and there are patches of newly-sown grain, but the greater portion is now in broom-sedge and weedy stubble and corn land. Near the middle there is a small "wet-weather branch," which empties into a large creek a mile distant. November 11, 1881, in this locality, in the weedy stubble, my first specimen of Le Conte's Bunting was secured. Nov. 16, a second was taken in the broom-sedge near the same spot. Nov. 17, a third was shot, and several others were seen. Dec. 3, three more were captured; two in the broom-sedge, and the remaining one in the swamp grass bordering the "branch." Dec. 10, my last visit to the field, six additional specimens were taken, and as many more were seen. I am not aware that the species has hitherto been reported as occurring so far east as South Carolina.—LEVERETT M. LOOMIS, *Chester, S. C.*

THE SHARP-TAILED FINCH IN KANSAS. — Col. N. S. Goss, of Neosho Falls, Kansas, wrote me under date of Oct. 17, 1881, that he had killed what he thought was a male Nelson's Sharp-tailed Finch. Two days later he shot another, which he kindly sent me. The bird proved to be, as Mr. Goss supposed, *Ammodramus caudacutus nelsoni*. The birds were killed "at the edge of a slough, on the low bottom lands of the Neosho River, about two miles from Neosho Falls." This discovery is of special interest as indicating that the Sharp-tailed Finch, formerly supposed to be strictly maritime in its distribution, may be found locally over a wide range in the interior.—J. A. ALLEN, *Cambridge, Mass.*

NOTE ON *Mitrephanes*, A NEW GENERIC NAME. — The name *Mitrephorus* of Sclater, P. Z. S., 1859, p. 44, is preoccupied in Coleoptera by *Mitrephorus*, Schönh., 1837, emended *Mitrophorus*, Burm., 1844. It may therefore be changed to *Mitrephanes*; type *Mitrephanes phæocercus* (Scl.); including *Mitrephanes aurantiiventris* (Lawr.), if not also *Mitrephanes fulvifrons* (Grd.), and its var. *pallescens* (Coues). — ELLIOTT COUES, *Washington, D. C.*

NESTING OF *Empidonax minimus* AND *Helmintherus vermivorus* IN PENNSYLVANIA AND NEW JERSEY. — Although instances of the breeding of the Least Flycatcher within the limits of Pennsylvania and New Jersey have been affirmed by Turnbull and one or two other authorities, a precise record cannot perhaps be found that will prove it to breed as far south as Philadelphia. Having found a nest and clutch of eggs belonging to this species, June 1, 1881, and satisfactorily identified the parent birds by shooting them, it is thought that this notice may prove of interest as perhaps removing doubts as to the accuracy of Turnbull's statement. *E. minimus* escaped the notice of the writer till the spring of 1880, when two pairs were noticed in June in the suburbs of Philadelphia, but any nests which may have existed escaped my observation. The present year (1881) I first noticed them in Delaware County, Pa., two pairs taking up their abode in an orchard surrounding the house. Here the above men-

tioned nest was found, placed on a drooping branch of an apple tree fifteen feet above the ground. The species was seen and heard singing about six miles west of Camden, New Jersey, in June, and again in July at the same place; is it not just therefore to suppose this pair had a nest near the spot?

Worm-eating Warblers were noticed in full song in the vicinity of Marple, Delaware County, Pa., as early as the last week in April, and whilst on a collecting trip in May I procured three males and a female in southern Chester County, and on dissecting the latter I was surprised to find in her oviduct a partly shelled egg. On the 16th of June, 1881, a ramble in the woods resulted in finding a brood of young of this species scarcely able to fly; one of them is now in my collection and another just missed the same claim to immortality. The old birds were exceedingly solicitous but so wary that three shots failed to procure either of them.

Near Camden, New Jersey, I procured a female Worm-eating Warbler in the latter part of July, 1880; its actions and the time of year caused me to infer it had young near by. — SAMUEL N. RHOADES, *Haddonfield, N. J.*

CUCKOOS LAYING IN THE NESTS OF OTHER BIRDS.—As far as my knowledge extends, there are only four instances known, in which the eggs of *Coccygus americanus* have been found in other bird's nests, namely, the two given by Nuttall, in nests of Catbird and one by Langdon in Robin's, and that mentioned by Ridgway in *Coccygus erythrophthalmus*. I was not a little astonished to find last Saturday, June 4, 1881, an egg of the Yellow-billed Cuckoo in a Catbird's nest, and near by another one in the nest of a Black-billed Cuckoo. The Catbird's nest contained only one egg of its rightful owner; another Catbird's egg was found broken on the ground. The Cuckoo's egg was fresh, but the Catbird's egg was incubated. The nest of the Black-billed Cuckoo contained besides the parasitic egg, which was fresh, two eggs, both incubated, but one much more than the other, the embryo being fully developed. The parent bird (*Coccygus erythrophthalmus*) was sitting, but left when the tree was ascended and stationed itself on a near tree to watch our movements.

The circumstances attending the discovery of these two eggs make me think that such cases of parasitic Cuckoo's eggs might not be so very exceptional and still evade the watchful eye of the collecting oölogist or of the observing ornithologist. I went out to look for nests of *Empidonax acadicus*. I took my nephew, a lad of fifteen, with me to assist in taking down nests from trees. In passing a thicket by the wayside, he looked in and immediately called out, "a big nest, blue eggs." Judging from the surroundings, I replied without taking the trouble to look at the thing, "a Catbird's nest; let it alone." We passed on and after a little while a Catbird crossed our way. He saw the bird and I told him that this was the Catbird whose nest he had just found. He wondered that a bird of this size lays such large eggs. Inquiring how large the egg was, he showed the size with thumb and index. I smiled and said it was not ex-

actly that big, but he insisted, and I concluded to walk back and look at the eggs, when the discovery was made. Who cares to look into each of the dozen of Catbird's nests we find in the course of a season? We are satisfied to know that this is the nest of the Robin, the Wood-thrush, the Catbird; but we do not think of taking the trouble to look every time at their eggs or young.

Still more likely to elude discovery would the strange egg be in the other Cookoo's nest. In this neighborhood at least are the Cuckoo's nests generally amidst such a terribly entangled mass of wild vine that we do not care to go up for mere pleasure. I do not know how regular egg-collectors go to work; other ornithologists may operate differently. My case may be no measure. I give it only to draw attention to the matter, and I have made up my mind to despise no more Catbirds's nests in future.—O. WIDMAN, *St. Louis, Mo.*

[Mr. Widman has overlooked a note which appeared in an early number of this Bulletin (Vol. II, p. 110), where three instances of the laying of our Cuckoos in other bird's nests are given. Years ago when I used to take many Cuckoo's nests each season in the apple orchards about Cambridge it was no uncommon thing to find an egg of the Black-billed species in a clutch of the Yellow-bills, and on more than one occasion, but less often, the situation would be reversed. An instance of the latter kind came under my notice in 1878, when at Belmont, Mass., I found a nest of the Black-billed Cuckoo which contained, besides two eggs of the rightful proprietor, a single one of the Yellow-bill. Speaking from memory, and without consulting my notes on the subject, I should say that at least ten per cent of the Cuckoo's nests that I have found contained eggs of both species. But in no case have I ever seen the eggs of either kind in the nests of other birds.—WILLIAM BREWSTER.]

*Melanerpes erythrocephalus* ABOUT BOSTON. — Massachusetts, at least the extreme eastern part, has shared in the flight of Red-headed Woodpeckers that has been reported as visiting Southern Connecticut last fall.\* During the latter part of September, through October and into November, the oak groves in the suburbs of Boston were tenanted by numbers of these truly handsome birds. I should judge that about one-third were in full plumage, and their conspicuous dress attracting attention many were shot. Twelve years ago the individual occurrence of this species among us was thought worthy of record. Of late years, during the months above named, it has become a more frequent though irregular visitor, but never in such numbers as have recently shown themselves. In spring or summer it is rarely seen, yet an instance of its nesting in Brookline is given me by Mr. H. K. Job, who early in June, 1878, found five eggs in the hole of an apple tree. According to Dr. C. Hart Merriam, this Woodpecker is a common resident of Lewis County, N. Y.† May not our visitors have come from that direction?—H. A. PURDIE, *Newton, Mass.*

\* Ornithologist and Oölogist, Vol. VI, pp. 78, 79.

† This Bulletin, Vol. III, p. 123.

THE BARN OWL IN MAINE: A RETRACTION.—In the Bulletin for January, 1877, p. 28, I added the Barn Owl (*Aluco flammeus americanus*) to the catalogue of Maine birds, basing the record upon a specimen, which I had examined, in the possession of a taxidermist then of Portland. I very much regret to say that I now believe the account given me of this bird's capture within our state limits to have been false. Several other statements in relation to ornithology have since been made me by the same man, of a character so improbable and with such contradictory details that they can only be regarded as wilfully and utterly untrue. Their author has recently left the city under circumstances which dispel any doubts which may previously have existed as to the reliability of his word. I cannot longer be responsible for a statement emanating from such a source, and wish to formally withdraw the name of the Barn Owl from the list of birds known to occur in Maine.—NATHAN CLIFFORD BROWN, *Portland, Maine*.

THE SNOWY OWL AT FORT WALLA WALLA, W. T.—On November 10, 1881, one of my men shot here a female of this species (*Nyctea scandiaca*), which I have made into a fine skin. I reported the capture of one on December 1, 1880 (see this Bulletin, Vol. VI, p. 128), and these two are the only records known to me for the Pacific coast. The occurrence of this species here seems to be much rarer than in the Eastern States.—CHARLES BENDIRE, *Fort Walla Walla, W. T.*

CAPTURE OF THE GOLDEN EAGLE IN CRAWFORD COUNTY, PENNSYLVANIA.—A Golden Eagle (*Aquila chrysaëtus canadensis*) was shot in Rookdale Township this (Crawford) County on December 10, under the following circumstances. A farmer, by the name of Hull, early one morning saw the bird fly from a carcass in his field to the woods some distance off. He conceived the idea that it would return to the carrion and at once made a blind of the rails of a fence near by. The following morning he repaired to the blind long before daylight with gun in hand, and, although he was well concealed and waited patiently until nearly noon, no bird put in an appearance. Nothing daunted, however, he repeated the watching on the second morning, and about eight o'clock was rewarded by the return of the bird, which he shot. The eagle was purchased by Mr. Roe Reisinger of our city and is now mounted. It is the first recorded specimen, I believe, of this species taken in this county. The sex I could not ascertain, as the entire contents of the bird's body were drawn by Mr. Hull before bringing it to town, but from the following dimensions I should judge it to be a young female: Extent, 83 inches; wing, 24.50 inches; tail, 15 inches. Tail about two-thirds white. The black terminal zone was about four inches deep on outer quills and about one and one-half inches deep on the centre ones. The general color of the bird is brown, with wings almost deep black. The hood extends well down on the nape and is of a light tawny brown, approaching the golden hue probably as much as any of them do. The tarsus is well covered with feathers to the toes. On the whole it is a very clean and perfect specimen.—GEORGE B. SENNETT, *Meadville, Pa.*

THE SWALLOW-TAILED KITE IN DAKOTA. — On November 14, 1881, when a short distance west of Jamestown, Dakota Territory, I saw several Swallow-tailed Kites (*Elanoides forficatus*) flying around apparently in search of food. The day was clear and the Kites were much separated; one even was seen alone skimming along an alkali lake, showing every indication of searching for food. On November 17, farther to the west, about midway between Jamestown and Bismark, near the line of the Northern Pacific Railroad, I saw some fifty more of these beautiful birds, but this time in a flock, and each movement being common with them all it was a glorious sight. The weather had changed from that of the 14th, and was now cloudy with a brisk wind from the northwest, accompanied at times by a slight shower of rain, but this change they seemed to enjoy. So easily did they ride the storm, so beautiful were their evolutions, so much at home did they appear in mid-air, that when they had passed out of sight I was pained, for in this northern latitude such a sight is of very rare occurrence.—D. H. TALBOT, *Sioux City, Ia.*

A REMARKABLE SPECIMEN OF THE PINNATED GROUSE (*Cupidonia cupido*). — While overhauling some Grouse in the Boston markets a few years since I came across a specimen which exhibits the following peculiarities of plumage:

Adult ♂ (No. 2691, author's collection, Boston Markets, February 27, 1873—said to have come from Iowa). Ground-color above warm, brownish-cinnamon. Shorter neck-tufts or pinnate coverts, bright reddish-brown. Breast, reddish-chestnut, becoming almost clear chestnut anteriorly. A band or collar of broad, stiff feathers extends continuously around the neck in front and across the lower portion of the jugulum about in a line with the neck-tufts. These feathers although less stiff than the longest ones in the neck-tufts, are nevertheless quite as much so as the shorter ones. They make a conspicuous ruff which is mainly black mixed with a good deal of reddish-chestnut. The latter color on the shorter and overlapping feathers occurs in the form of narrow central stripes, which in some cases are nearly orange in tint; on the longer ones as a more or less broad, lateral marginning.

I offer the above description solely for the purpose of calling attention to this remarkable specimen for I am entirely at a loss to account for its peculiarities. Several who have seen it have suggested that it may be a hybrid between the Prairie Hen and the Ruffed Grouse, but this hypothesis seems hardly a probable one, inasmuch as none of the combined characters which would be expected in such an offspring are here presented. The ruff does indeed remotely suggest that of *Bonasa*, but otherwise the bird shows all the well-marked structural characters of *Cupidonia*. To simply say that it is abnormal will hardly satisfy the numerous investigators of this pushing age of inquiry.—WILLIAM BREWSTER, *Cambridge, Mass.*

WILSON'S PLOVER (*Ægialites wilsonius*) IN NEW ENGLAND. — Mr. W. A. Stearns sends me a letter from Mr. Arthur S. Fiske, dated Gurnet, Conn., Aug. 22, 1877. "This morning I shot a bird of this species on

the beach at the south of the hotel. It was alone, though there were several flocks of other Plovers near at hand. In note and actions it closely resembled the Piping Plover, but was larger and lighter colored. Capt. Hall called it the 'Pale Ring-neck,' and said he had seen it at the Gurnet before." The description given by Mr. Fiske (length 7.75 inches; bill fully 1 inch, black," etc.) leaves no doubt that the bird was Wilson's Plover.—ELLIOTT COUES, *Washington, D. C.*

CAPTURE OF BAIRD'S SANDPIPER ON LONG ISLAND.—On September 22, 1880, I shot a specimen of *Tringa bairdi* on Montauk, Long Island. The bird was in a flock of "Peeps" (*Ereunetes pusillus*), feeding on the beach of Great Pond, a brackish lake often in communication with the Sound. It so closely resembled the "Peeps" that I only noticed it on account of its larger size. The skin I preserved, though badly cut by the shot.—DANIEL E. MORAN, *Brooklyn, N. Y.*

[This is apparently the first known occurrence of this species on the Atlantic Coast south of New England.—EDD.]

AN ADDITION TO THE MAINE FAUNA.—On October 8, 1881, I received from Mr. Alpheus G. Rogers, of Portland, an immature specimen of *Rallus elegans*, the King Rail, which he shot on Scarborough Marsh, on the morning of that day. This species is new to the State of Maine, and has occurred in New England only about half a dozen times.

Its previous New England record is as follows: (1) Stratford, Conn., breeding, Linsley, *Am. Jour. Sci. and Arts*, Vol. XLIV, No. 2, p. 267. (2) Portland, Conn., one specimen; (3) Saybrook, Conn., one specimen, Merriam, *Rev. Birds Conn.*, p. 115. (4) Nahant, Mass., one specimen, Purdie, this Bulletin, Vol. II, p. 22. (5) Sudbury Meadows, Mass., one specimen, Purdie, this Bulletin, Vol. III, p. 146.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

CAPTURE OF *Larus leucopterus* NEAR BOSTON.—In November last Mr. Charles I. Goodale showed me an immature specimen of *Larus leucopterus* in the flesh, which he stated was shot near Boston. The bird is now in my collection.—CHARLES B. CORY, *Boston, Mass.*

THE GREAT BLACK-BACKED GULL (*Larus marinus*) FROM A NEW LOCALITY.—Mr. Howard Saunders, in his excellent synopsis of the *Larinæ* (*P. Z. S.*, 1878, pp. 155-212), p. 180, in defining the known range of this species, says that there is "no record from the American side of the Pacific," but that he had "examined undoubted specimens from Japan," this being considered "a very great extension of its previously known range." During the present year the National Museum has received specimens of this species, in alcohol, from Herald Island, in the Arctic Ocean, northwest of Behring's Straits, and from Port Clarence on the American side of the Straits, the former collected by Captain C. M. Hooper, of the U. S. Revenue Cutter "Corwin," the latter by Dr. T. H. Bean, of the National Museum.—ROBERT RIDGWAY, *Washington, D. C.*

THE SNAKE-BIRD IN KANSAS.—Prof. F. H. SNOW, of the University of Kansas, writes as follows: "I have the pleasure of informing you of the capture of a specimen of the Snake-bird, *Plotus ankinga*, in the Solomon Valley in Western Kansas. It was taken in August of this year by C. W. Smith, Esq., of Stockton, and the skin is now in my possession."—ELLIOTT COUES, *Washington, D. C.*

CAPTURE OF THE SEA DOVE 150 MILES FROM THE SEA:—On November 8th, 1881, a Sea Dove (*Alle nigricans*), was shot in the Hudson River, at Lansingburg, by Alfred Benjamin of that village. The bird was mounted by William Gibson of the same place, and is in his collection.—AUSTIN F. PARK, *Troy, N. Y.*

ADDITIONS TO THE CATALOGUE OF NORTH AMERICAN BIRDS.—The following list includes all the species that have been added to the North American fauna since the publication of the "Nomenclature of North American Birds." The numbers given these additional species indicate their position in the list; and I would suggest that any author publishing a species new to our fauna do the same; so that collectors and others may know its number.

440.\* *Buteo fuliginosus* *Scl.* LITTLE BLACK HAWK.

440.\*\* *Buteo brachyurus* *Vieill.* SHORT-TAILED HAWK; WHITE-FRONTED HAWK.

708.\* *Puffinus borealis* *Cory.* NORTHERN SHEARWATER.

717.\* *Estrelata gularis* (*Peale*) *Brewster.* PEALE'S PETREL.—ROBERT RIDGWAY, *Washington, D. C.*

NOTES ON SOME BIRDS OF THE BELT MOUNTAINS, MONTANA TERRITORY.—The following observations were made in the southern range of the Belt Mountains, latitude about 46° 30', some miles to the west and south of the head-waters of the Musselshell, from which the land, intersected by frequent smaller streams, gradually rises to the foot of the low mountains, which are mostly forest-clad and of some 6,000 feet elevation. The streams have little or no timber save in the mountains or among the foothills where scattering firs appear; but willows grow in dense thickets along the bank, striving apparently by numbers to make up for any lack in size.

The notes extend from June 22 to July 3, 1880, three days excepted, when the writer was absent. All the birds were found within an area of a square mile, perhaps less, but the locality was unusually favorable, including several patches of burnt timber, a large open tract stretching up the mountain side to almost the summit, and two streams flowing in rather open cañons with clumps of willows on either bank.

Several interesting birds which were sought for unsuccessfully at this time I have since found in the Belt Range, viz. *Cinclus mexicanus*, *Cyanocitta stelleri* (*macrolopha*?) and *Tetrao canadensis franklini*. Skins of most of the species mentioned were preserved.

1. **Turdus migratorius propinquus.** — Common. A bird nesting June 25.
2. **Turdus fuscescens.** — Found only in the cañons. Common.
3. **Sialia arctica.** — Nesting in deserted Woodpecker's holes.
4. **Regulus calendula.** — Everywhere among the firs.
5. **Parus montanus.** — Common. It never whistles more than two successive notes, at least I have never heard it.
6. **Sitta carolinensis aculeata.** — One pair found breeding in the knot-hole of a large fir. Young hatched on or shortly before the 25 June.
7. **Neocorys spraguei.** — A pair breeding on a high, grass-covered knoll just outside the timber. The male was often observed flying high overhead, constantly shifting his position, but keeping at about the same elevation while uttering his song—a rather monotonous carol, unless one is sufficiently near to hear the wonderful resonance of the blended notes.
8. **Dendroeca auduboni.** — Common.
9. **Pyranga ludoviciana.** — Rather common. A female observed nest-building June 26, the male meantime singing in a neighboring tree-top. July 3 the nest was apparently completed but without eggs. It was built in a fir some thirty feet from the ground and about midway on a small horizontal limb where several twigs projected out on either side.
10. **Cotyle riparia.** — Swallows apparently of this species were seen flying high overhead. Their homes were found lower down on the streams.
11. **Vireo gilvus swainsoni.** — A common bird in the cañons.
12. **Carpodacus purpureus.** — Two individuals observed.
13. **Chrysomitris pinus.** — A flock of these restless little creatures appeared almost daily, uttering their querulous notes.
14. **Poœcetes gramineus confinis.** — Common on the grassy slopes.
15. **Melospiza fasciata fallax.** — Occasional among the willows of the streams.
16. **Junco oregonus.** — Apparently this form was not uncommon.
17. **Spizella socialis.** — Abundant in the patches of dead timber.
18. **Cyanospiza amœna.** — Not uncommon but confined to the willows etc. along the streams.
19. **Sturnella magna neglecta.** — Breeding on the grassy hillsides.
20. **Picicorvus columbianus.** — Occasional. Much commoner lower down among the scattered firs of the *coulées*.
21. **Perisoreus canadensis capitalis.** — A single bird shot July 2. It was almost full-grown, but in the "fluffy" plumage peculiar to young birds.
22. **Contopus borealis.** — One bird seen.
23. **Contopus virens richardsoni.** — Common.
24. **Chordiles virginianus henryi.** — In dead timber, common.
25. **Picus villosus.** — Young of perhaps a week old were found on the 25th of June.
26. **Picoides arcticus.** — Rather common.
27. **Picoides americanus dorsalis.** — Two or three specimens noted.



28. *Melanerpes erythrocephalus*. — One bird observed.
29. *Colaptes mexicanus*. — Common. The young of this species doubtless hatching on June 28, as an old bird was seen carrying out and dropping, a hundred or two yards from the nest, the fragment of an egg shell at that time.
30. *Buteo borealis*. — Hawks apparently of this species occasionally observed.
31. *Bonasa umbellus umbelloides*. — Not common. Is mostly found in the cotton-wood timber of the valleys.
32. *Tetrao obscurus richardsoni*. — Not as common here as in some other localities of the Belt Mountains. They prefer rough and rocky ledges with only a moderate growth of fir to denser forests. Occasionally one finds them outside of the mountains, but only among the scattered clumps of fir growing on the high bluffs of some of the streams. Their "tooting" is a low, muffled sort of cooing, uttered without vigor, or any visible effort on the bird's part, which may be squatting on some rock at the time.
33. *Tringoides macularius*. — Found on the streams. — R. S. WILLIAMS, *Benton, W. T.*

REMARKS ON SOME WESTERN VERMONT BIRDS. — The Red-headed Woodpecker (*Melanerpes erythrocephalus*, Sw.), is a strangely erratic species. Mr. C. S. Paine has taken but a single specimen in the eastern part of the State, and five years ago it was a very rare species about here (Brandon). Now they are nearly as abundant as the common Golden-wings. At Orwell, only ten miles to the west, they outnumber the Golden-wings, and appear to be on the increase. Dr. C. H. Merriam mentions (Bull. Nutt. Ornith. Club, Vol. III, No. 3, p. 124) their remaining in Northern New York during some of the severest winters known. I have never observed them in this vicinity later than the 2d of October, except in one instance (January 7, 1879), when I took a single specimen. At Rutland, sixteen miles south of Brandon, Mr. Jenness Richardson informs me that they are a resident species, being as abundant in winter as in summer. They were particularly abundant about here during August and September, 1879, being attracted, no doubt, by the great abundance of black cherries (*Prunus serotina*), which they appear to relish greatly. I have frequently observed this species to employ the same nest for several successive seasons.

The Pileated Woodpecker (*Hylotomus pileatus*, Bd.), is by no means as rare as might be expected in so thickly populated a section. Not a year passes but that from one to five specimens are taken. I have notes of at least fifteen specimens, taken during the last four or five years, all of which occurred from the month of September to May, inclusive; the last record being the capture of two young females, September 28, 1881. Of the remaining *Picidæ*, *Sphyrapicus varius* is a rather rare summer visitant; *Picoides arcticus*, a very rare winter visitant: while *Picus pubescens* and *P. villosus* are resident species, the former being by far the most abundant.

During the winter of 1880-81, no less than seven specimens of the little Acadian Owl (*Nyctale acadica*) were taken, all within a few days' time. Two specimens of the Snowy Owl (*Nyctea scandiaca*) were also taken at the same time. During the fall of 1879, a fine specimen of the American Raven (*Corvus corax carnivorus*) remained in this immediate vicinity for nearly a month, but successfully eluded capture. A single specimen of the Canada Jay (*Perisoreus canadensis*) was taken in December, 1874.

Although the recorded instances of the breeding of the Loggerhead Shrike (*Lanius ludovicianus*) in New England are rather numerous, the following notes may not be entirely devoid of interest. One rainy day last season (June 5, 1880) as I was seated on the porch of a neighbor's house, my attention was attracted by a Shrike flying past several times. I watched the bird and saw it fly to the top of an old apple tree. The tree was not more than *two rods* from the house, and was densely overrun with a large grape vine. I climbed the tree, and, about twenty feet from the ground, found the nest, and, much to my disappointment, found no eggs, but four nearly fledged young. The old birds were very tame, and flew about within a few feet of my head.

This season I visited the locality May 16, and was fortunate enough to find a nest and four fresh eggs. The nest was in an apple tree, perhaps three rods from the nest of last year; was composed of coarse sticks and weeds, very deeply hollowed, and lined with wool and twine. I took both parent birds with the nest, thus rendering the identification positive.

A few days after this (May 23, 1881) some boys told me they had found a "Cat Bird's" nest in an apple tree about a mile from the vicinity of the other nests. They had climbed the tree, and said "the old bird flew at them, and snapped her bill *hard!*" I knew this to be a Shrike, and, when I visited the place, had the pleasure of securing another nest, containing six eggs, with the female parent. The nest was much like the other, but was perhaps deeper, and lined entirely with feathers.

The Great Northern Shrike (*Lanius borealis*) is a rather rare species, being most frequently observed in spring.

The Scarlet Tanagers (*Pyrranga rubra*) first made their appearance about here in the summer of 1875, when a single pair nested. Since then they have gradually increased until probably twenty pairs nested the past season. Strange as it may seem, I have never taken the common Titlark (*Authus ludovicianus*) during the spring migrations, although they are usually abundant in the fall.—F. H. KNOWLTON, *Brandon, Vt.*

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ERRATUM.—In Vol. VI, p. 199, lines 9 and 10. for "centimeters" read millimeters.

# BULLETIN

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### ON A COLLECTION OF BIRDS LATELY MADE BY MR. F. STEPHENS IN ARIZONA.

BY WILLIAM BREWSTER.

EARLY in 1881 I wrote to Mr. Stephens asking him to get me some Arizona birds during the following spring and summer. He replied that he was on the point of starting by wagon for California, but that being provided with a camping outfit, and feeling under no necessity of hurrying by the way, he was willing to give his whole attention, for several months at least, to collecting in my interest. It was accordingly arranged that the journey should take in as great a variety of country as possible, and, that the most productive points should be thoroughly worked. The energy, intelligence, and conscientiousness with which this plan was carried out are sufficiently attested by the material results upon which the present paper is based.

The route traversed was substantially as follows: Leaving Galeyville on March 3, Mr. Stephens drove southward to Cave Creek, where a few days' collecting yielded a limited number of birds. At the end of this time he retraced his steps to Galeyville, and continuing northward, passed Camp Bowie, and crossed to the western side of the Chiricahua Mountains. Here a halt was made at Morse's Mill, after a journey of seventy miles by wagon-road from Cave Creek, although the distance is less than twelve

miles in an air line. This place is described in the notes as being at the head of a cañon, in a sort of basin, elevated about seven thousand feet above the sea, and encircled by mountains which rise from two to three thousand feet higher.

From some further remarks on the general character of the range, I quote the following: "The Chiricahua Mountains are situated in the southeast corner of Arizona, some of the foot-hills even reaching the line of New Mexico and the Mexican state of Sonora. Several small streams run east and west from their summits, those of the former division emptying into the San Simon Valley; of the latter into the Sulphur Spring and San Bernardino Valleys. The first two water-sheds are comprised in the Rio Gila system, while the San Bernardino Valley stretches southward, and water from it flows into the Pacific near Guaymas."

"These valleys are usually grassy plains, but there are scattering bushes, mostly mesquite, in some of them. The scrub oaks begin with the foot-hills; they are evergreen, the leaves being insensibly replaced with new ones in May. A little higher the juniper (called 'cedar' by the people here) comes in. Still higher, on the north side of the hills, there is a little piñon and scrub pine, while the summits are heavily timbered with red and black pines. In the gulches some fir grows, and on the hillsides, mostly near the summits and facing the north, occasional patches of aspen."

At Morse's Mill three weeks were very profitably spent, and on April 1 a start was made for Tucson, the next objective point. The route led through Sulphur Spring Valley, Tombstone, and Cienega Station, and at all these places, as well as at some intermediate points, a longer or shorter stay was made for the purpose of collecting. These delays consumed so much time that Tucson was not reached until April 18.

The country lying about this town and the neighboring station, Camp Lowell, proved so rich in desirable birds that it engaged Mr. Stephens' attention for nearly the whole of the two succeeding months, during which, however, a brief visit was paid to the Santa Rita Mountains, where some important observations were made.

The season practically ended with June, for the wagon-journey, begun on the 29th of that month, across the arid plains and scorching deserts of middle and western Arizona, was attended

with such privations, and often positive suffering, that little attention could be paid to birds. Mr. Stephens arrived at Yuma on July 15, and by August 1 reached his final destination, Riverside, California.

The entire trip yielded about six hundred and fifty skins besides a fairly large number of nests and eggs. Under the terms of our agreement I had all the birds, a representative series of the nests and eggs, and the field-notes relating to both. This collection, embracing the results of four months' uninterrupted work in a region as yet only imperfectly known, seems to me too complete in itself to be merely skimmed of its *cream*. Accordingly in preparing the following paper I have included every species which is represented among the specimens or mentioned in the collector's notes. It should be understood, however, that the latter were not kept with reference to this plan, and it is not unlikely that certain common birds, which are known to occur in Arizona, were inadvertently omitted. For similar reasons, the number of specimens obtained can seldom be taken as an exponent of the relative abundance of the species to which they belong, as a decided preference was given to the rarer kinds. Three species new to the "North American" fauna have already been announced (this Bulletin, Vol. VI, p. 252.).

A few technical points require explanation. The catalogue numbers are usually those of the collector's field-book, but in certain cases—as of specimens taken as types, or with birds obtained by Mr. Stephens before starting on the present trip—I have used my own numbers, either alone or in connection with the original ones. This double system need cause no confusion, however, for the field-numbers never reach 700, while those of my general catalogue are always above 5,000. Of the measurements, the length and stretch were taken in the field, the others from the dry skins. The biographical matter is of course based on Mr. Stephens' notes, which are sometimes paraphrased, sometimes literally quoted, as convenience dictates. The frequent quotations of Mr. Henshaw's experience or opinions are always, unless otherwise stated, from his Report in Volume V of "Explorations and Surveys West of the One Hundredth Meridian."

1. ***Turdus unalascae* Gmel.** DWARF THRUSH.—The only Hermit Thrush in the present collection is unmistakably refera-

ble to var. *unalascæ*. In fact it gives nearly the same measurements as the smallest extreme in the large series examined by Mr. Henshaw.\* Mr. Stephens marks it as the first which he has seen in Arizona where, however, it was found sparingly by Mr. Henshaw in October, 1873.

283, ♀ ad., Tucson, April 25. Length, 6.40; extent, 10.10; wing, 3.26; tail, 2.61; culmen, .52. "Bill dark brown, yellowish at base of lower mandible; legs pale brownish; iris brown."

2. ***Turdus ustulatus* Nutt.** RUSSET-BACKED THRUSH.—Under this heading I include with some hesitation, a Thrush killed May 17, in the Santa Rita Mountains. The specimen unfortunately was one of three or four which were accidentally destroyed while in the collector's possession, but Mr. Stephens is positive that it was referable to the above variety. As he is perfectly familiar with *ustulatus*, having previously met with it in California, there can, I think, be little doubt of the correctness of his determination. This record, if accepted, will make the first for Arizona.

397, ♀ ad., Santa Rita Mountains, May 17. Length, 6.90; extent, 10.70; "Iris dark brown; bill black, brownish at base of lower mandible; legs very pale brown."

3. ***Turdus migratorius propinquus* Ridgw.** WESTERN ROBIN.—Robins were met with only in or near the Chiricahua Mountains, where perhaps a dozen individuals were seen. The one mentioned below is typical of the slightly differentiated, but still apparently constant western race.

75, ♂ ad., Morse's Mill, March 20. Length, 10; extent, 16.40; wing, 5.38; tail, 4.36. "Iris dark brown."

4. ***Oreoscoptes montanus* (Townsend) Baird.** MOUNTAIN MOCKINGBIRD. There is no mention of this species among the notes made during the late trip.

6313 (author's coll.), ♀ ad., San Pedro River, Dec. 25, 1880. Length, 8.90; extent, 12.40.

5. ***Mimus polyglottus* (Linn.) Boie.** MOCKINGBIRD.—"Generally distributed and common, but not as abundant as in Southern California" (Camp Lowell). "Common in the valleys; they are found but a short distance up the foot-hills of the mountain ranges" (near Tombstone).

181, ♀ ad., near Tombstone, April 8. Length, 9.80; extent, 13.10; wing, 4.30; tail, 5.03.

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\* See this Bulletin, Vol. IV, p. 137.

550. ♂ ad., Camp Lowell, June 20. Length, 10.20; extent, 14.10; wing, 4.40; tail, 5.20. "Iris golden brown; bill and legs black."

6. ***Harporhynchus bendirei* Coues.** BENDIRE'S THRASHER.

—Mr. Stephens' notes contain few references to this species, and judging from the limited number of specimens which he obtained, it must be less abundant in Arizona than either *H. crissalis* or *H. curvirostris palmeri*, a status which is in strict accordance with Mr. Henshaw's experience. About half of the skins collected during the past season are labeled either Camp Lowell or Tucson, while the remainder were taken at various points directly north or south of the latter place, and not over twenty-five miles distant in either direction. Outside the limits of this desert region the bird was not anywhere met with, although it was common at Phoenix in February, 1880.

A nest taken June 16 near Tucson, and identified by the capture of one of the parent birds, was placed in a "cat-claw mesquite" at a height of about five feet from the ground. It is a deeply-hollowed, smoothly-lined structure, composed of fine grasses and soft, hemp-like vegetable fibres, which are protected externally, in a manner common to the nests of nearly all Thrashers, by a bristling array of interlaced twigs and thorny sticks. The interior cup measures two inches in depth by three in width. The two eggs which it contained, like those described by Dr. Coues, are readily separable from eggs of *H. palmeri* by their grayish-white instead of dull green ground-color. They are faintly marked with reddish-brown and lavender, the spots being confined chiefly to the larger ends, where many of them assume the character of blotches or dashes of color. These eggs measure respectively  $1.02 \times .79$  and  $.96 \times .79$ . The greatest number of eggs found in any of the several nests examined by Mr. Stephens was three, but two seemed to be the usual complement.

Of the birds before me four are in first plumage, a stage which, if I am not mistaken, has never been previously examined. The first of these (No. 426, twenty-five miles south of Tucson, May 22) was unable to fly, and was taken from the nest. It differs from the adult in the following particulars: The upper parts, with nearly the same ground-color, have a tinge of reddish-brown which, on the rump, wing-coverts, and tips and outer webs of the primaries and secondaries, shades into brownish-chestnut. The sprouting rectrices are also tipped with the same color. The under parts generally are warm fulvous, which becomes nearly pure cinnamon on the sides and crissum, and along the median line pales to

fulvous-white. The breast and abdomen are everywhere thickly but finely spotted with dull *black*, these markings becoming finer and fainter where they border on the anal region. The remaining three (Nos. 538, ♀; 539, —; and 540. ♂: twenty-five miles north of Tucson, June 16) have the wings fully developed, and were all out of the nests when shot. They are apparently of about the same respective ages, but nevertheless exhibit a good deal of individual variation. No. 538 has the breast and sides finely spotted with dark brown, but a central space extending forward along the abdomen nearly to the breast is entirely unmarked. No. 535 has large, rounded, but indistinct blotches of light brown, thickly and evenly distributed over the entire under parts, excepting the throat, anal region and crissum. No. 539 has a cluster of faint, sagittate spots on the centre of the breast, but otherwise is entirely immaculate beneath. All three are essentially similar above, and differ from No. 426 in having the crown, nape, back, wing-coverts and outer webs of the secondaries pale reddish-brown, which, on the rump, is only tinged with chestnut. The primaries are dark brown edged with hoary; the rectrices, dull black with a terminal band of pale reddish-chestnut crossing both webs of all the feathers, but most broadly those of the outer pairs.

The adults making up the rest of this series vary a good deal with the season at which they were taken. A specimen killed in February is clear grayish-brown above, with the breast and abdomen thickly spotted; and one or two others shot early in May are nearly as deeply colored and distinctly marked. But most of the breeding birds are either entirely immaculate beneath, or with only a few faint specks scattered here and there upon the abdomen. Several of the latter are nearly as pale as my specimens of *H. lecontei*, and equally devoid of any special markings. This condition apparently is due mainly to the wearing off of the tips of the feathers, although the continued action of the sun's rays doubtless lends its aid, and still further bleaches the plumage.

453, ♂ ad, Camp Lowell, May 30. Length, 10.30; extent, 13.30.

4987, (author's coll.) ♂ ad., Tucson, Feb. 28, 1880. Wing, 4.25; tail, 4.84; culmen (chord), .99.

423, ♂ ad., twenty-five miles south of Tucson, May 21. Length, 10.40; extent 14.20; wing, 4.30; tail, 4.92; culmen, 1.06.

425, ♂ ad., same locality, May 22. Length, 10.30; extent, 13.10; wing, 4.01; tail, 4.96; culmen, 1.05.

455, ♂ ad., Camp Lowell, May 30. Length, 10.18; extent, 13.30; wing, 4.20; tail, 4.96; culmen, 1.05.

537, ♂ ad., twenty-five miles north of Tucson, June 16. Length, 10.10; extent, 12.70; wing, 4.14; tail, 4.78; culmen, 1.01.

583, ♂ ad., Camp Lowell, June 24. Length, 10.50; extent, 13; wing, 3.99; tail, 4.95; culmen, 1.05.

454, ♀ ad., Camp Lowell, May 30. Length, 10.10; extent, 12.70; wing, 3.95; tail, 4.43; culmen, 1.

529, ♀ ad., twenty-five miles north of Tucson, June 16. Length, 10.20; extent, 12.10; wing, 3.63; tail, 4.50; culmen, 1.01. "Iris yellow; legs dull bluish."



557, ♀ ad., Camp Lowell, June 21. Length, 10; extent, 13.20; wing, 4.10; tail, 4.60; culmen, .95.

426, ♀ juv. first plumage, twenty-five miles south of Tucson, May 22. Length, 6.10; extent, 9.40; "Iris light gray; bill dark brown, lighter below; legs pale bluish." Taken from the nest; wings and tail only partly developed.

538, ♀ juv. first plumage, twenty-five miles north of Tucson, June 16. Length, 10.10; extent, 12.50; wing, 3.77; tail, 4.59; culmen, .96.

539, — juv. first plumage, same locality and date. Length, 9.80; extent, 12.70; wing, 3.92; tail, 4.67; culmen, .92.

540, ♂ juv. first plumage, same locality and date. Length, 10; extent, 12.80; wing, 3.90; tail, 4.55; culmen, .95.

7. **Harporhynchus curvirostris palmeri** Ridgw. PALMER'S THRASHER. — During the present trip this Thrasher was met with at various points in the desert region about Tucson and Camp Lowell, where it was one of the most abundant and characteristic summer birds. Its favorite haunts were barren wastes covered with cactuses and stunted mesquites; but, like many other desert species, it occasionally visited the more fertile valleys to drink at the springs and water-holes. At these latter places specimens were obtained without much difficulty, but on all other occasions they were exceedingly shy and wary. In February, 1880, Mr. Stephens found Palmer's Thrasher at Phoenix, and he also took winter specimens along the San Pedro River.\*

Numerous nests were taken. The one before me was placed in a cholla at a height of about seven feet. It is composed outwardly of large twigs, and is lined with bleached grasses. Although by no means a rude structure, it suffers by comparison with the nest of *H. bendirei*, its construction being simpler, and all the materials much coarser. The three eggs which it contained were only slightly incubated on June 14. They measure respectively  $1.05 \times .82$ ,  $1.09 \times .82$ , and  $1.08 \times .83$ . They are pale greenish-blue, finely and very evenly spotted with brown and lavender. The number of eggs making up this set was not exceeded in any of the others examined by Mr. Stephens.

The series of skins embraces no less than twenty-two examples, and very fully illustrates all the variations of age and season. Among the number are several in the hitherto undescribed first plumage. The

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\* Its distribution in Arizona is apparently limited to a comparatively small area which, according to Mr. Stephens' experience, is bounded on the east by the valley of the San Pedro; on the west by a point "a few miles east of the Hassayampa, on the desert between it and Salt River."

youngest of these (No. 480, ♂?, Camp Lowell, June 2), although well feathered, has the wings and tail undeveloped, and was taken from the nest. Its entire upper plumage is rusty brown with a chestnut tinge which deepens on the rump and outer webs of the secondaries to decided chestnut brown. The general coloring of the under parts is pale fulvous with a strong tinge of rusty chestnut across the breast, along the sides, and over the anal region and crissum. The breast is obsoletely spotted, but the plumage elsewhere, both above and below, is entirely immaculate. An older bird (No. 577, Camp Lowell, June 23) with the wings and tail fully grown out, differs in having the back (excepting a narrow anterior space bordering on the nape), with the exposed webs and coverts of the wings, and a broad tipping on the tail feathers, bright rusty; — while in a third of about the same age (No. 614, ♂, Camp Lowell, June 28), the rusty color, although paler, is uniformly distributed over the entire upper surface save upon the wings and tail feathers, which are only edged and tipped with that color. This last example is so faintly marked beneath that the plumage at first sight appears immaculate; but a closer inspection reveals a few spots here and there among the central feathers of the breast. A fourth (No. 487, Camp Lowell, June 3), although apparently no older, has the breast and sides spotted more sharply than in any of the adults, while the rusty tinge above is chiefly confined to the rump, posterior half of the back, and the outer webs of the wing feathers.

Several of these young birds are so nearly similar to specimens of *H. bendirei* in corresponding stages that they can be separated only with great difficulty. The stouter bill and entirely black lower mandible of *palmeri* may, however, always be depended upon as distinguishing characters; and, moreover, the pectoral spotting of *bendirei* is usually (but not invariably) finer and sharper, and the rusty tinge above paler and less extended.

The adults present a good deal of variation, most of which is apparently seasonal. Winter specimens have the lower abdomen, with the anal region and crissum, rich rusty-fulvous, while the markings beneath are similar in character to those of true *curvirostris*, and the spots equally distinct, numerous and widely distributed. With the advance of the season, and the consequent wear and tear of the plumage, the spots gradually fade or disappear. Indeed some of the June specimens are absolutely immaculate beneath, although most of them, like Mr. Ridgway's types, have a few faint markings on the abdomen. In this condition the general coloring is also paler and grayer, and the fulvous of the crissum and neighboring parts often entirely wanting.

But although the evidence of this series tends to demolish several of the characters upon which *palmeri* has been based, enough remain to separate it from its ally the true *curvirostris* of Mexico and the Rio Grande Valley in Texas. The best of these, perhaps, is to be found in the different marking of the tail-feathers. In *curvirostris* the three outer pairs are broadly tipped with pure white which, on the inner web, extends twice as deep, basally, as on the outer ones, and has its boundaries every-

where sharply defined: in *palmeri* the outer rectrices are, at the most, barely tipped with pale brown, which either extends squarely across both webs, or fades insensibly into the darker color of the feather. The bill of *palmeri*, also, is usually longer and more curved than that of *curvirostris*.

8. **Harporhynchus lecontei** Bonap. LECONTE'S THRASHER. — The great rarity of Leconte's Thrasher, even in the heart of the desolate regions where alone it has so far been found, is still further attested by Mr. Stephens' experience during the past season, for although he searched for it carefully in all suitable places between Camp Lowell and Riverside (California), he met with only two individuals. These occurred about fifteen miles west of Maricopa, Arizona, in a locality which the accompanying notes describe as follows: "Near the middle of 'Forty-five-mile Desert,' between Maricopa Wells and Gila Bend. No chollas or other cactuses in the immediate neighborhood, but some giant cactuses about a mile away in the hills; a few mesquites and much scattering low brush in the vicinity; nearest water twenty miles away."

Dr. Cooper is said to have found the species "rather common" in the desert between Fort Mohave and the San Bernardino Mountains, California, but Mr. Stephens has thrice traversed this route without seeing a single specimen. In a recent number\* of the American Naturalist, however, Mr. E. Holterhoff, Jr., speaks of seeing the bird "on the Colorado desert, at a station called Flowing Wells," and gives an interesting description of a nest and set of eggs taken there. "The nest was placed in a palo verde tree, and was a very bulky affair, measuring externally nine inches in depth and six in width; the hollow of the nest was fully three inches in depth. It was so awkwardly situated that much of the base of the nest had evidently been filled in to firmly support the structure. The two eggs were somewhat smaller than those of *H. redivivus*, lighter in color, and marked all over with finer reddish spots, thicker at the larger end."

I am inclined to consider the Maricopa specimens above referred to as adults, although this is not so clear in the case of the male, portions of whose plumage suggest that of a young bird. Both are in worn, ragged condition, but there is no indication of any moult, save upon the wings and tail, where many of the feathers have been replaced by new ones which are conspicuous among the others by their fresher coloring.

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\* Vol. XV, No. 3, March, 1881.

On a former occasion\* I urged the specific distinctness of this Thrasher from *H. redivivus*, and to this conviction I still hold, although a comparison of additional specimens of both species inclines me to believe with Dr. Coues that Leconte's Thrasher is, on the whole, more nearly related to *redivivus* than to any other United States form.

616, ♂ ad., near Maricopa Wells, July 5. Length, 10.80; extent, 12.30; wing, 3.85; tarsus, 1.27; tail, 5.35; culmen (chord), 1.30; bill from nostrils, .91; width below posterior angle of nostrils, .23.

617, ♀ ad., same locality and date. Length, 10.60; extent, 12; wing, 3.78; tarsus, 1.32; tail, 4.91; bill (chord of culmen), 1.32; bill from nostril, .94; width below posterior angle of nostril, .24. "Iris reddish brown; bill black; legs nearly black. Stomach contained a small species of katydid and some ants."

9. **Harporhynchus crissalis** Henry. CRISSAL THRASHER.  
—Not uncommon near Tombstone, Tucson and Camp Lowell.

Dr. Coues, comparing this species with Le Conte's, Palmer's, and Bendire's Thrashers, concludes: † "and we are led to infer that when the 'topography' of the other three species is fully determined, it will be found no less extensive. For there is nothing peculiar in the economy or requirements of any one of the four in comparison with the rest." This view, however, is hardly supported by the testimony of observers who have had the best opportunities of studying these birds. The Crissal Thrasher, according to Captain Bendire, ‡ "appears to prefer damp localities near water-courses, and confines itself principally to spots where the wild currant is abundant." Mr. Henshaw says: "According to my experience, it is not a bird of the plains, but inhabits by preference the rough sides of rocky cañons or the hill-sides covered with broken *débris*, interspersed with straggling bushes." Mr. Stephens' evidence is not less explicit. He found the Crissal Thrasher in copses in valleys, and along streams. It was especially fond of well-shaded undergrowth, and spent much of its time on the ground, searching for food under the bushes. It never occurred among cactuses, and the only place where he saw it actually associating with Bendire's and Palmer's Thrashers, was at Camp Lowell, where the latter species, with other desert birds, came to drink at a water-hole and thus occasionally mingled with the Crissal Thrashers which inhabited the neighboring thickets. The contrast which these traits afford

\* This Bulletin, Vol. VI, p. 67.

† Birds of the Colorado Valley, p. 74.

‡ Birds of the Colorado Valley, p. 75.

when compared with the ones characterizing the other three species named by Dr. Coues, is sufficiently apparent.\*

A nest received from Mr. Stephens is precisely similar to those found by Captain Bendire. The three eggs which it contained measure respectively,  $1.14 \times .76$ ,  $1.14 \times .75$ , and  $1.08 \times .77$ . Like all the specimens which have been previously reported they are entirely unspotted, and both in size and color closely resemble eggs of the common Robin.

*Juv., first plumage* (♀, No. 546, Camp Lowell, June 20). Above dull reddish-brown. Rump and a broad tipping on the tail, brownish-chestnut. Under parts nearly uniform brownish-fulvous. Crissum chestnut, of nearly the same shade as in the adult. Maxillary stripes dusky brown. No trace of spots or other dark markings either above or beneath.

Five other young birds in the series are essentially similar and call for no special comment. I cannot find any description of the first plumage of either *H. redivivus* or *H. lecontei*, but with the exception of these, *H. crissalis* is the only North American species in the sub-family *Miminae* whose young are entirely unmarked beneath. It is interesting to note that with respect to the color of the upper parts, especially that of the rump, they resemble the young of both *H. bendirei* and *H. palmeri*.

The individual variation presented by the adults before me is chiefly confined to the relative length and curvature of the bill, the general coloring of all being nearly uniform, although the breeding birds are slightly paler than those taken early in the season.

166, ♂ ad., near Tombstone, April 5. Length, 12.10; extent, 12.30; "Iris light brown. Stomach contained insects, and a small lizard."

251, ♂ ad., Tucson, April 21. Length, 12.60; extent, 12.60; wing, 4.11; tail, 6.25; chord of culmen, 1.56. "Iris light gray, — almost white."

278, ♂ ad., Tucson, April 25. Length, 12.10; extent, 12.50; wing, 3.84; tail, 6.20; culmen, 1.47.

309, ♂ ad., Tucson, April 30. Length, 11.70; extent, 12.70; wing, 4.05; tail, 5.85; culmen, 1.53.

434, ♂ ad., Tucson, May 25. Length, 11.20; extent, 12.30; wing, 4.02; tail, 5.52; culmen, 1.43.

503, ♂ ad., Tucson, June 8. Length, 11.40; extent, 12.10; wing, 3.85; tail, 5.85; culmen, 1.46.

578, ♂ ad., Camp Lowell, June 23. Length, 11.60; extent, 12.60; wing, 4.05; tail, 5.75; culmen, 1.45.

437, ♂ juv., first plumage, Tucson, May 26. Length, 11.30; extent, 12.40; wing, 3.92; tail, 5.50; culmen, 1.18.

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\* In a recent letter Mr. Stephens adds:—"From my own observations I should characterize the respective haunts of the Arizona Thrashers as follows: *H. lecontei* is exclusively a bird of the deserts. *H. bendirei* is a desert bird approaching the valleys. *H. palmeri* occurs along the edge of deserts, occasionally appearing in valleys. *H. crissalis* haunts valleys and broad canons, seldom venturing into the deserts."

595, ♂ juv., first plumage, Camp Lowell, June 25. Length, 11.60; extent, 12.50; wing, 3.84; tail, 6.18; culmen, 1.35.

596, ♂ juv., first plumage, Camp Lowell, June 25. Length, 11.80; extent, 12.60; wing, 3.86; tail, 6.12; culmen, 1.40.

436, ♀ ad., Tucson, May 25. Length, 11.80; extent, 12.40; wing, 3.90; tail, 5.90; culmen, 1.55. Parent of No. 435.

435, ♀ juv., first plumage, same locality and date. Length, 11.30; extent, 12.20; wing, 4.02; tail, 5.55; culmen, 1.20.

546, ♀ juv., first plumage, Camp Lowell, June 20. Length, 11.60; extent, 12.40; wing, 4.95; tail, 6.02; culmen, 1.38.

555, ♀ juv., first plumage, Camp Lowell, June 21. Length, 11.30; extent, 12.20; wing, 3.73; tail, 5.65; culmen, 1.42.

10. **Cinclus mexicanus** Swains. AMERICAN WATER OUZEL. — The following notes relate to the only specimen met with:

“My attention was called to the song of some bird which came from the mountain brook running past camp. There was a steep, rocky wall on the further side, and the notes echoing from it, and mingling with the purling of the water, sounded exquisitely sweet. On looking for the author, I noticed some ripples rolling out from behind the willows that fringed the nearer shore, and soon discovered an Ouzel dabbling in the shallow water. My shot wounded the bird, but did not disable its wings, for it repeatedly dived, using them as propelling agents when beneath the surface. The sun shining on the air-bubbles that clung to its plumage made it look like a ball of silver flying through the water. On the surface it paddled along very much in the manner of a Phalarope.”

79, ♂ ad., Morse's Mill, Chiricahua Mountains, March 20. Length, 7.90; extent, 12.10; wing, 3.85; tail, 2.50. “Iris hazel. The flesh was dark and tough with a fishy smell. The inside of the skin looked like that of a small Wader. Stomach contained insects.”

11. **Sialia mexicana** Swains. WESTERN BLUEBIRD. — A single pair, taken in the Chiricahua Mountains in March, are accompanied by the note, “abundant in all kinds of timber.”

12. **Sialia arctica** Swains. ARCTIC BLUEBIRD. — This species is noted as “rare in the low valleys” among the Chiricahua Mountains. A small flock was also seen near Galeyville on “grassy plains,” where “they flew from one weed-stalk to another.” They were “restless and rather shy.” The single specimen obtained was shot on this latter occasion.

13. **Myiadestes townsendi** (Aud.) Caban. TOWNSEND'S SOLITAIRE. — Three specimens were obtained in the Chiricahua

Mountains, where they occurred sparingly among piñons. "They are rather tame, and have a habit of sitting perfectly still for several minutes at a time. Flight slow. Food insects." A fourth, taken May 13, in the Santa Rita Mountains, completes the series.

14. **Phainopepla nitens** (Swain.) *Scl.* BLACK-CRESTED FLYCATCHER.—The life history of this singular bird has been so fully given by Dr. Coues in "Birds of the Colorado Valley," that there is little chance of adding anything new. Most of the specimens obtained by Mr. Stephens are from Camp Lowell and Tucson, but he did not find it abundant at either of these points. He speaks of it as having "a sweet but not loud song," and remarks on its known fondness for mistletoe berries. "Iris red."

15. **Polioptila cærulea** (Linn.) *Scl.* BLUE-GRAY GNAT-CATCHER.—Eight specimens, representing the following localities: Chiricahua Mountains (two ♂, two ♀, April 1-6); Tombstone (♂, April 5); Cienega Station (♂, April 16); Tucson (♂, April 20); Santa Rita Mountains (♂, May 20).

16. **Polioptila plumbea** Baird. BLACK-CAPPED GNAT-CATCHER.—This Gnatcatcher was observed at Tucson, Camp Lowell, and near Yuma, specimens being taken in all these localities. A female shot at the first-named point on April 23 had evidently finished laying, but a nest found June 27 near Camp Lowell contained a perfectly fresh egg, while another taken at Yuma, July 15, had a single egg of its owner and one of the Dwarf Cowbird. These dates indicate that the species breeds at least twice during the season.

The Yuma nest, although a delicate structure, will not compare with that of *P. cærulea*. It entirely lacks the exterior coating of lichens so effectively employed by the commoner bird, and in its general appearance closely resembles the Redstart's well-known domicile, being similarly felted of soft bark-strips and hemp-like vegetable fibres. It is lined with down from plants, a few feathers, and the hair of some small quadruped. Externally it measures 2.25 in width by 1.55 in depth; internally 1.45 by 1. The egg is pale greenish-blue, coarsely and very evenly spotted with reddish-brown. Its measurements are .53×.42. This nest was placed in a bunch of mistletoe, at a height of about eight feet from the ground. It is accompanied by the male parent, who revealed its position by repeatedly entering the mistletoe.

and showing other signs of anxiety respecting its contents. The position of the Camp Lowell nest is not mentioned.

*Juv., first plumage*, ♀ (No. 619, Yuma, July 15). Crown pale cinereous; rest of upper parts faded brown. The wings are uniform with the back, but all the primaries and secondaries have a broad white edging on their outer webs. The tail is dull black, with white areas on the outer rectrices corresponding in extent and purity with those of the adult. Beneath, pale ashy white.

A study of the large series of Gnatcatchers collected during the past season confirms the views which I lately advanced (this Bulletin, Vol. VI, p. 101) regarding the affinity of *P. plumbea* and *P. "melanura,"* and also affords additional evidence of the assumed specific distinctness of *P. californica*. The Yuma examples of *P. plumbea* are quite as typical as those taken at Tucson and Camp Lowell, while seven specimens of *californica*, collected at Riverside after Mr. Stephens' return to that place, still further attest the constancy of most of the characters which I assigned to the latter bird. That relating to the brown edging of the secondaries will, however, have to be abandoned, for *plumbea* proves to be similarly characterized when in worn breeding dress; the supposed shorter tail of *californica* also is now shown to be an inconstant feature. All of the three young males taken at Riverside have black lateral crown-stripes like those of immature *plumbea*.

267, ♂ ad., Tucson, April 23. Length, 4.60; extent, 5.80; wing, 1.85; tail, 2.15; bill (from nostril), .25; tarsus, .67. "Iris dark brown;" lores ashy mixed with black; eyelids white.

500, ♂ ad., Tucson, June 7. Length, 4.60; extent, 5.80; wing, 1.81; tail, 2.12; bill (from nostril), .25; tarsus, .65. Lores ashy mixed with black; upper eyelid white.

564, ♂ ad., Camp Lowell, June 22. Length, 4.55; extent, 5.80; wing, 1.84; tail, 2.19; bill (from nostril), .25; tarsus, .70. Lores black; both eyelids white.

567, ♂ ad., Camp Lowell, June 22. Length, 4.40; extent, 5.60; wing, 1.84; tail, 2.16; bill (from nostril), .26; tarsus, .70. Lores and superciliary line white mixed with black.

581, ♂ ad., Camp Lowell, June 24. Length, 4.40; extent, 5.80; wing, 1.98; tail, 2.20; bill (from nostril), .28; tarsus, .70. Lores ashy.

618, ♂ ad., Yuma, July 15. Length, 4.40; extent, 5.80; wing, 1.90; tail, 2.15; bill (from nostril), .26; tarsus, .68. Lores, with broad superciliary lines meeting across the forehead, white.

621, ♂ juv., first plumage, Yuma, July 16. Length, 4.40; extent, 5.60; wing, 1.76; tail, 2.13; bill (from nostril), .26; tarsus, .72. Sides of head ashy white; ill-defined, black, lateral crown-stripes partially concealed.

272, ♀ ad., Tucson, April 23. Length, 4.50; extent, 5.50; wing, 1.78; tail, 2.21; bill (from nostril), .27; tarsus, .68. "Had just finished laying."

458, ♀ ad., Camp Lowell, May 31. Length, 4.50; extent, 5.50; wing, 1.86; tail, 2.13; bill (from nostril), .26; tarsus, .68.



601, ♀ ad., Camp Lowell, June 27. Length, 4.60; extent, 5.50; wing, 1.74; tail, 2.18; bill (from nostril), .27; tarsus, .70. "Taken with the nest and one fresh egg."

619, ♀ juv., first plumage, Yuma, July 15. Length, 4.40; extent, 5.60; wing, 1.86; tail, 2.12; bill (from nostril), .26; tarsus, .70.

566, — juv., first plumage, Camp Lowell, June, 22. Length, 4.40; extent, 5.60; wing, 1.85; tail, 2.22; bill (from nostril), .27; tarsus, .68.

For comparison I add measurements of the seven specimens of *P. californica* above mentioned.

656, ♂ juv., fall plumage, Riverside, Sept. 16. Length, 4.55; extent, 5.70; wing, 1.67; tail, 2.20; bill (from nostril), .29; tarsus, .75.

658, ♂ juv., fall plumage, same locality and date. Length, 4.70; extent, 5.80; wing, 1.89; tail, 2.21; bill (from nostril), .26; tarsus, .75.

688, ♂ juv., fall plumage, Riverside, Sept. 23. Length, 4.50; extent, 5.90; wing, 1.73; tail, 2.11; bill (from nostril), .30; tarsus, .75.

657, ♀ juv., fall plumage, Riverside, Sept. 16. Length, 4.60; extent, 5.80; wing, 1.85; tail, 2.14; bill (from nostril), .30; tarsus, .72.

686, ♀ juv., fall plumage, Riverside, Sept. 23. Length, 4.45; extent, 5.90; wing, 1.92; tail, 2.17; bill (from nostril), .30; tarsus, .75.

687, ♀ juv., fall plumage, same locality and date. Length, 4.50; extent, 5.80; wing, 1.85; tail, 2.20; bill (from nostril), .28; tarsus, .70.

655, ♀ juv., fall plumage, Riverside, Sept. 16. Length, 4.45; extent, 5.75; wing, 1.86; tail, 2.15; bill (from nostril), .28; tarsus, .75.

17. **Regulus calendula** (Linn.) Licht. RUBY-CROWNED KINGLET.—"Common among the Chiricahua Mountains, especially in deciduous timber. I think a few summer and breed." The following specimens are identical with eastern ones:

28, ♂ ad., Cave Creek, Chiricahua Mountains, March 8. Length, 4.60; extent, 6.50; wing, 2.32.

122, ♂ ad., Morse's Mill, March 28. Length, 4.20; extent, 6.90; wing, 2.38.

18. **Lophophanes inornatus** (Gamb.) Cass. PLAIN TITMOUSE.—Mentioned in Mr. Stephens' notes as rare on the foothills of the Chiricahua Mountains, but no specimens are included in his collection.

19. **Lophophanes wollweberi** Bonap. WOLLWEBER'S TITMOUSE.—This species was abundant in the Chiricahua Mountains, where a fine series was collected. They were usually seen in flocks of six or eight, and often associated with other small birds. They were rarely met with excepting in the groves of "scrub oaks," but their food appeared to be wholly insects. A single pair taken in the Santa Rita Mountains in May are unaccompanied by any special remarks.

20. **Parus meridionalis** ScL. MEXICAN CHICKADEE.—In a late number of the Bulletin (Vol. VI, p. 252) I briefly

announced this important addition to the North American fauna. The series obtained by Mr. Stephens comprises nine specimens, all of which were taken near Morse's Mill. They occurred upon the sides or summits of the surrounding mountains, at elevations varying from seven to ten thousand feet, and were usually found in pairs, although they not unfrequently associated with other birds, among which are mentioned *Psaltriparus plumbeus*, *Lophophanes wollweberi*, *Sitta pygmæa*, and *Peucedramus olivaceus*. They were for the most part silent, but occasionally uttered a "chee-wee-wee," as well as notes resembling those of *P. montanus*.

Previous writers have compared this species with *P. atricapillus*, but to me it seems nearer related to *P. montanus*. With the latter it agrees in certain peculiarities of size and proportions, while the general coloring and markings of the two are so similar that almost the only appreciable points of difference are presented by the white forehead and head-stripes of *montanus*. These characters are, of course, enough to instantly separate the birds, but their importance is somewhat weakened by the fact that one of my specimens of *meridionalis* (No. 124) possesses a head-stripe which, though ill-defined and considerably shorter, is nevertheless similar in appearance and position to that of *montanus*. While it would be rash to argue any varietal affinity on the strength of this single specimen, the outcropping of such a well-marked characteristic certainly shows a close relationship between the two species, unless indeed No. 124 be regarded as a hybrid.

65, ♂ ad., Morse's Mill. March 18. Length, 5.20; extent, 8.50; wing, 2.74; tail, 2.60. "Iris dark brown. Stomach contained insects."

82, ♀ ad., Morse's Mill, March 21. Length, 5.10; extent, 8.10; wing, 2.73; tail, 2.62.

83, ♂ ad., same locality and date. Length, 5.10; extent, 8.50; wing, 2.90; tail, 2.69.

99, ♀ ad., Morse's Mill, March 24. Length, 4.70; extent, 7.90; wing, 2.63; tail, 2.42.

100, ♂ ad., same locality and date. Length, 5.10; extent, 8.60; wing, 2.76; tail, 2.65.

104, ♂ ad., Morse's Mill, March 25. Length, 5.10; extent, 8.30; wing, 2.75; tail, 2.40.

105, ♂ ad., same locality and date. Length, 5.10; extent, 8.20; wing, 2.66; tail, 2.56.

124, ♂ ad., Morse's Mill, March 29. Length, 5.10; extent, 8.70; wing, 2.85; tail, 2.68.

125, ♂ ad., same locality and date. Length, 5; extent, 8.20.

21. ***Psaltriparus plumbeus* Baird.** LEAD-COLORED TIT.  
—Of the eight specimens of this species which are included in the collection, seven were taken in the Chiricahua Mountains, the

remaining one being from the Santa Rita Mountains. Mr. Stephens does not appear to have found it elsewhere, and in his notes characterizes it as rather uncommon. It was oftenest seen among the oaks of the foot-hills, where it associated with Wollweber's Titmouse, the Ruby-crowned Kinglet, and several other small birds.

22. **Auriparus flaviceps** (*Sundev.*) *Baird*. YELLOW-HEADED TIT.—Mr. Henshaw while in Arizona met with but few specimens of this curious little species. He attributed their apparent rarity to the lateness of the season at which his observations were made, and doubtless this explanation is the true one; for during the past spring Mr. Stephens found them in abundance both at Cienega Station and Tucson. Nevertheless it is probable that some individuals pass the winter in Arizona, for one of my specimens is dated November 29, and another was killed early in March. A nest taken at Tucson contained three fresh eggs on April 20.

23. **Sitta carolinensis aculeata** (*Cass.*) *Allen*. SLENDER-BILLED NUTHATCH.—This Nuthatch was common in the pine forests of the Chiricahua Mountains, but the notes do not mention its occurrence elsewhere.

24. **Sitta pygmæa** *Vig.* PYGMY NUTHATCH.—Equally common with the preceding species in the same locality.

25. **Certhia familiaris mexicana** (*Gloger*) *Ridgw.* MEXICAN CREEPER.—Various writers have attributed the Mexican Creeper to our fauna, either on purely inferential grounds, or from a misconception, which at one time prevailed, regarding the relationship of the form found in California; for up to the present time no undoubted specimens of *mexicana* have been taken within our boundaries. It accordingly gives me much pleasure to announce the actual occurrence in Arizona of this well-characterized race, of which the specimen mentioned below is perfectly typical. It is the only Creeper which Mr. Stephens met with during the past season, but in the previous year two others, which I have not examined, but which he considers identical with this, were taken in the same locality. All the Arizona specimens obtained by Mr. Henshaw were referred to our eastern form.

66, ♀ ad., Morse's Mill, Chiricahua Mountains, March 18. Length, 4.80; extent, 7.10; wing, 2.45; tail, 2.25; culmen, .50. "Iris dark brown."

26. **Campylorhynchus brunneicapillus** (Lafr.) Gray. CACTUS WREN. — I notice little of special interest among the notes accompanying the eight skins which Mr. Stephens collected. He found the bird abundant in all suitable localities, and took several nests and sets of eggs. The unsophisticated young were easily shot, but the adults, even when breeding, were shy and hard to secure.

27. **Salpinctes obsoletus** (Say) Caban. ROCK WREN. — Mr. Stephens makes no mention of finding this species in Arizona during the past season, but he sends me a single specimen taken December 25, 1880, on the San Pedro River.

28. **Thryomanes bewicki leucogaster** Baird. WHITE-BELLIED WREN. — The collection includes five specimens of this form, which was apparently met with only in the Chiricahua Mountains and about Tucson. In the former locality it was common along the banks of streams where, however, it kept so closely hidden among the weeds and brush that it was oftener heard than seen. The examples before me are typical.

29. **Troglodytes aedon** Vieill. HOUSE WREN. — The only House Wren taken is absolutely indistinguishable from many of my Massachusetts specimens, and I accordingly refer it here. Furthermore, I fail to find the characters supposed to distinguish var. *parkmani*, in any of the several California specimens included in my series. If the latter form really possesses any *constant* differential characters, I believe they have yet to be defined.

169, ♀, near Tombstone, April 6. Length, 4.80; extent, 6.40; wing, 2.10. "Iris dark brown. Shot among low brush. Not common."

30. **Anthus ludovicianus** (Gm.) Licht. AMERICAN TIT-LARK.

271, ♀ ad., Tucson, April 23. Length, 6.50; extent, 10.60. "Bill brown, paler at base below; legs brown." Several seen in marshes along the stream.

31. **Helminthophila luciae** (Coop.) Ridgw. LUCY'S WARBLER. — Although this diminutive *Helminthophila* has been known to ornithologists for nearly twenty years, few specimens have found their way into the cabinets of private collectors, and up to the present time the species has remained a very rare one. On this account the acquisition of a good series of skins was among the main objects of Mr. Stephens' trip, and the success which rewarded his labors is very gratifying.

The first specimen was shot April 15 at Cienega Station, where, during the succeeding three days, six more were obtained. They frequented large willows along the banks of a stream and, like Kinglets, spent much of their time searching for food at the extremity of the branches. Although active and restless, they were not at all shy. The only note heard here was a sharp "tseep." On April 18 Mr. Stephens reached Tucson, where almost the first birds met with were Lucy's Warblers. During the early part of his stay they were more abundant among the mesquites than any other species, and their "tseeping" could be heard on every side. They were continually in motion, flying from tree to tree, and occasionally visiting some low brush in the vicinity. By the 28th their numbers became perceptibly diminished, but many remained to breed in the surrounding country. The presence of the species at Camp Lowell is attested by a single young specimen, barely large enough to fly, which was taken there on June 1st, but which is unaccompanied by any special remarks. An adult male from the Santa Rita Mountains, however, comes to me with the following comments, under date of May 19:—"This is the only one of the species which I have seen here. It was near the banks of a stream below the mouth of a cañon, where there were a few mesquites interspersed among the oaks. I watched it for some time. It lingered among the mesquites, seeming to prefer them to the oaks, in which, however, it occasionally alighted for a moment."

In addition to the above, Mr. Stephens' notes supply some very important information regarding the previously doubtful nesting habits of this species. A female taken April 25, proved on dissection to be about to lay, but no eggs were actually taken until May 8, when a full set of five was found near Tucson. After that date many nests containing either eggs or young were examined. Their sites were variable; the characteristic place, like that of the specimen discovered by Captain Bendire, was behind the loosened bark of a large tree, but use was frequently made of old Woodpecker's nests, knot-holes, and in short all sorts of crevices. A brood of nearly fledged young (one of which is before me) was actually taken from the deserted domicile of a Yellow-headed Titmouse, which had been appropriated by the new tenant without any apparent repairs or alterations. Among *Helminthophilæ* this Wren-like mode of nidification is, I believe, peculiar to this species.

I have the Tucson nest just alluded to. It is composed outwardly of twigs and weed-stalks; inwardly of hemp-fibres; while there is a scanty lining of horse-hairs and feathers. Like most *hole* nests it is rather flat, and the rim is thin in places where the walls of the cavity encroached on the space within. The eggs are white, handsomely wreathed about the larger ends with reddish-brown and umber spots, a few of which are also scattered over their general surfaces. They measure respectively .58X.46; .58X.46; .62X.46; .60X.47. The notes accompanying this set are as follows:—"Nest about six feet above the ground in a crevice nearly covered by bark. The bottom of the hole contained an old nest; over this were droppings of wood-rats, and the whole filled the cavity nearly to its top. The tree (a mesquite) stood within twenty feet of a frequented road. Female sitting. Eggs fresh; one had been broken and crowded in behind the nest by the parent bird." None of the other sets found by Mr. Stephens contained more than three eggs and the present clutch is probably an exceptionally large one.

*Juv., first plumage* (♀ No. 471, Camp Lowell, June 1).—Wing-coverts and inner secondaries broadly tipped and edged with pale brownish-fulvous. Primaries and rectrices edged and tipped with hoary white. Rump and upper tail-coverts yellowish-chestnut. No chestnut on the crown. Otherwise colored like the adult.

Among a number of adults before me the range of individual variation is very limited, and is chiefly confined to the females. While it is true that some of the latter are indistinguishable from the brightest males, the majority have the rump and crown-patches considerably duller, the chestnut being either diluted in shade, or mixed with the color of the back. In No. 206 the crown-patch is concealed, the chestnut being restricted to the basal portion of the feathers.

225, ♂ ad., Tucson, April 18. Length, 4.40; extent, 6.70.

229, ♂ ad., Tucson, April 19. Length, 4.40; extent, 6.80.

231, ♂ ad., Tucson, April 19. Length, 4.40; extent, 7; wing, 2.35; tail, 1.93.

232, ♂ ad., Tucson, April 19. Length, 4.30; extent, 6.80; wing, 2.35; tail, 1.95.

253, ♂ ad., Tucson, April 21. Length, 4.40; extent, 6.70; wing, 2.21; tail, 1.87.

254, ♂ ad., Tucson, April 21. Length, 4.30; extent, 6.70; wing, 2.21; tail, 1.95.

255, ♂ ad., Tucson, April 21. Length, 4.50; extent, 7.10; wing, 2.23; tail, 1.93.

280, ♂ ad., Tucson, April 25. Length, 4.40; extent, 7; wing, 2.25; tail, 1.95.

- 299, ♂ ad., Tucson, April 28. Length, 4.40; extent, 6.70.
- 326, ♂ ad., Tucson, May 4. Length, 4.30; extent, 7; wing, 2.20; tail, 1.93.
- 340, ♂ ad., Tucson, May 7. Length, 4.40; extent, 7; wing, 2.21; tail, 1.93.
- 410, ♂ ad., Santa Rita Mountains, May 19. Length, 4.10; extent, 6.90; wing, 2.22; tail, 1.82.
- 516, ♂ ad., Tucson, June 10. Length, 4.30; extent, 7; wing, 2.12; tail, 1.85.
- 524, ♂ juv., first plumage, Tucson, June 11. "Taken from nest, which also contained a young *Molothrus ater obscurus*."
- 197, ♀ ad., Cienega Station, April 15. Length, 4.10; extent, 6.40; wing, 2.12; tail, 1.78. "Iris dark brown; bill black above, bluish beneath; legs black."
- 206, ♀ ad., Cienega Station, April 16. Length, 4.40; extent, 6.50; wing, 2.17; tail, 1.80.
- 208, ♀ ad., Cienega Station, April 16. Length, 4.20; extent, 6.60; wing, 2.09; tail, 1.82.
- 217, ♀ ad., Cienega Station, April 17. Length, 4.30; extent, 6.70; wing, 2.21; tail, 1.84.
- 218, ♀ ad., Cienega Station, April 17. Length, 4.10; extent, 6.60; wing, 2.10; tail, 1.85.
- 228, ♀ ad., Tucson, April 19. Length, 4.30; extent, 6.70; wing, 2.10; tail, 1.85.
- 230, ♀ ad., Tucson, April 19. Length, 4.30; extent, 6.70; wing, 2.07; tail, 1.84.
- 256, ♀ ad., Tucson, April 21. Length, 4.20; extent, 6.60.
- 260, ♀ ad., Tucson, April 22. Length, 4.30; extent, 6.60; wing, 2.08; tail, 1.85.
- 261, ♀ ad., Tucson, April 22. Length, 4.30; extent, 6.70; wing, 2.25; tail, 1.92.
- 279, ♀ ad., Tucson, April 25. Length, 4.30; extent, 6.70; wing, 2.10; tail, 1.82. "About to lay."
- 433, ♀ ad., Tucson, May 25. Length, 4.50; extent, 6.50. "With nest and three eggs; set completed."
- 449, ♀ ad., Tucson, May 29. Length, 4.40; extent, 6.90; wing, 2.11; tail, 1.77. "With nest and three eggs; set completed."
- 439, ♀ juv., first plumage, Tucson, May 26. Nearly feathered, but unable to fly. "Taken from a deserted nest of *Auriparus flaviceps*."
- 471, ♀ juv., first plumage, Camp Lowell, June 1. Length, 4.20; extent, 6.60; wing, 2.10; tail, 1.71. Fully feathered.

32. *Helminthophila celata lutescens* Ridgw. WESTERN ORANGE-CROWNED WARBLER. — A few were seen late in April near Tucson.

Although not perfectly typical of *lutescens*, both of the Orange-crowned Warblers obtained by Mr. Stephens are clearly referable to that race. They are not quite as yellow beneath as Nicasio (California) specimens, but they come within a shade of it, and are brighter by many shades than any of the same sex among my eastern examples; while in the vividness of the

olive-green on the upper parts, they fully equal any of the California females. The supposed difference in the tail markings of these races does not hold in the series before me, for a male from Nicasio has the edging on the inner webs of the rectrices quite as broad and pure as that of any of the Florida ones. The loss of this character, however, would be of little consequence, as the two forms could be readily separated by the wide difference in their general coloring. Mr. Henshaw considers his Arizona specimens true *celata*, and *lutescens* is now for the first time announced from that Territory.

290, ♀ ad., Tucson, April 26. Length. 5; extent, 7.30; wing, 2.45; tail, 2.10. "Iris dark brown; bill black, lighter at base below; legs dark brown. Not common."

291, ♀ ad., same locality and date. Length. 4.70; extent, 7.10; wing, 2.37; tail, 2.09. Same remarks.

(To be continued.)

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## NOTES ON THE OS PROMINENS.\*

BY FREDERIC A. LUCAS.

My attention was first directed to this bone by Dr. Shufeldt's article in this Bulletin for October, 1881, and subsequently by Mr. Jeffries' paper in the number for January, 1882. With the view of ascertaining in what birds the os prominens is present, and what is its use, I have since examined quite an extensive series of birds. Lack of time has prevented as extended an examination as could be wished for; and as regards discovering any special use for this sesamoid, it must be confessed that the results of the investigation are not wholly satisfactory, being rather negative than positive in their character. But such as they are, they are submitted, in the hope that they may prove of service to some better skilled physiologist.

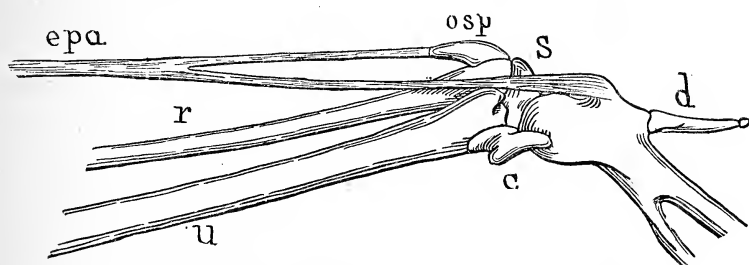
Through a lack of good material Dr. Shufeldt failed to discover the existence of the os prominens in any of the Owls, but it would seem to be specially characteristic of the *Bubonidæ*, since it is present in one particular shape, and with a constant mode of articulation, in the following species of that family: *Ketupa ceylonensis*, *K. javanensis*, *Bubo ignavus*, *B. bengal-*

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\* The name "os prominens," proposed by Dr. Shufeldt, has been adopted by me because it seems eminently proper that so large a sesamoid, frequently equalling the patella in size, should receive a distinctive appellation.



ensis, *B. virginianus*, *Scops brasilianus*, *S. asio*, *Nyctea scandiaca*, *Ninox albigularis*, *Asio otus*, *Syrnium nebulosum*, and *S. uralense*. It is not present in *Strix flammea* or *S. perlata*, and should it prove to be present in other genera of the *Bubonidae* than those noted above, it may serve as an additional, though trivial, point of distinction between the families *Bubonidae* and *Strigidae*.



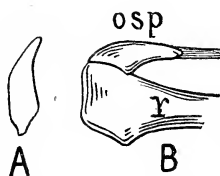
Left wing of *Bubo virginianus*, from below (reduced one third).

*r*, radius; *u*, ulna; *c*, cuneiform; *s*, scapho-lunar; *osp*, os prominens; *epa*, tendon of extensor patagii longus.

The accompanying cut, drawn from a fresh specimen of *B. virginianus*, explains the form and position of the os prominens.

It will be noticed that it is situated on the anterior surface of the distal end of the radius, and runs almost parallel with that bone, instead of standing erect as in the *Falconidae*. The radial portion of the tensor patagii longus terminates in the os prominens, and is not continued to the first metacarpal.

Apart from the Owls above noted, this bone has been found in *Otogyps calvus*, *Heterospizias meridionalis*, *Buteo melanoleucus*, *B. pennsylvanicus*, *B. lineatus*, *Circus gouldi*, *Asturina pucherani*, and *Haliaeetus albicilla*.



A. Os prominens of *Otogyps calvus*, full size.

B. " " " *Bubo virginianus*, seen from above to show articulation with radius, full size.

It is absent in *Polyborus tharus*, *Milvago chimango*, and the following peculiar forms which were examined to see if they would throw any light upon the subject: *Nyctibius*, *Strigops*, *Nestor*, *Megapodius*, *Ocydromus*, and *Atagen*. Neither was any trace of it to be found in two specimens of *Pandion haliaetus* from N. Africa and the Duke of York group. Dr. Shufeldt's theory that the os prominens is for the purpose of extending the wing area struck me, as it did Mr. Jeffries, as being untenable, from the fact that the increase of surface thus obtained was too slight to be of any value.\*

The first proposition of Mr. Jeffries' summary is that the bone serves to keep the friction of the extensor patagii longus from the carpus. Were this the case it ought surely to be present in the Albatross and Gull, birds which in a fresh breeze are continually flexing and extending their wings according to the direction of their flight and the varying force of the wind. But in both these birds the os prominens is absent,† and moreover, as we see in the Owls, it may be so situated as not to prevent the friction of the ulnar portion of the tendon. Second, that it serves only to a limited extent to increase the power of the extensor patagii longus to abduct the thumb, is shown by the fact that in the majority of cases that tendon is inserted in the first metacarpal. The exceptions to this, so far observed by me, are in *Otogyps calvus* and *Haliaeetus albicilla*, where there is a strong tendon running from the os prominens to the first phalanx of the thumb. The third proposition has already been considered, and the fourth (that it protects the carpus) must be rejected, both for the reason given by Mr. Jeffries, and because as we see it in Owls it frequently does not lie over the carpus at all. Only in *Otogyps calvus* does the os prominens seem to exist as a simple sesamoid, and in that bird it is imbedded in the tendon of the extensor patagii longus, and glides over the scapho-lunar. Were I to venture a suggestion it would be that

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\* The English Sparrow, which is but an indifferent flyer, can be deprived of one-half of the secondaries and one-fourth of the primaries of both wings, in the long axis of the pinion, without apparently impairing its flight. See Pettigrew.

† I find that this statement must be modified in regard to Gulls, if not retracted altogether, for since this paper was written I have found the os prominens in *Larus glaucus* and *L. dominicanus*. It is present as a small, elongated, trihedral prism, imbedded in the tendon of the extensor patagii longus, and playing over the flattened surface of the scapho-lunar.

by its serving as a point of attachment for the tensor patagii longus, that tendon is freed from all duties save that of "puckering up" the anterior margin of the wing; but, as stated before, that theory is by no means entirely satisfactory to me.

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A LIST OF BIRDS FROM THE LOWER MISSISSIPPI  
VALLEY, OBSERVED DURING THE SUMMER OF  
1881, WITH BRIEF NOTES.

BY O. P. HAY.

DURING the summer of 1881 the writer and two companions spent a little more than a month in the South, especially in the State of Mississippi, travelling and studying its zoölogy. Our primary object was to collect fresh-water fishes; and to this we devoted the greater part of our time and efforts. Incidentally, however, we collected and made observations on other animals. Hence this list of birds and the few notes concerning them. I did not intend to publish this list until I had opportunity to make additions to it; but the recent publication by Dr. F. W. Langdon of his field-notes on birds observed by him, early in the spring, at a point a little farther south, has made it seem proper that I should contribute my little toward making known the ornithology of this region.

Our observations and collections were made of course under difficulties, and no attempt was made to secure nests and eggs, or, in any special manner, notes on the breeding habits of birds. Still, on account of the season when our trip was made, this list may be of some value as indicating that the birds observed are summer residents. The number of species recorded is not large, but I include only birds that I am reasonably sure were seen. In nearly all cases the birds were shot, and identified by means of descriptions. Others were seen, but as they were not identified with certainty, they are not included in the list.

The birds noted as found at Memphis, Tenn., were really seen in Arkansas just across the river from Memphis. Most of our other notes were obtained at Vicksburg and Jackson, Miss.

The nomenclature adopted is that of Mr. Robert Ridgway, issued by the U. S. National Museum, 1881.

1. *Hylocichla mustelina* (Gmel.) Baird. WOOD THRUSH.—This species was seen and specimens were shot at Memphis and at Vicksburg. Its song was frequently heard; and it would appear to be quite common.

2. *Mimus polyglottus* (Linn.) Boie. MOCKINGBIRD.—Very abundant at all points visited. At the time we were at Vicksburg, July 1, the young had not yet left the nest, as negro boys were offering them captured in their nests for sale. In the "History of N. A. Birds" Dr. Brewer has stated that the Mockingbird in the South nests early in April, and that the young birds appear a month later. If this is the case these birds must remain in the nest six weeks or two months. I was informed that a law in Mississippi prohibits the keeping of these birds in confinement.

3. *Galeoscoptes carolinensis* (Linn.) Caban. CATBIRD.—This bird was quite common at Memphis. I did not note it at any point farther south.

4. *Harporhynchus rufus* (Linn.) Caban. BROWN THRUSH.—A single specimen seen at Jackson.

5. *Sialia sialis* (Linn.) Haldem. BLUEBIRD.—Seen in considerable numbers at Memphis, Vicksburg, and Jackson.

6. *Lophophanes bicolor* (Linn.) Bonap. TUFTED TITMOUSE.—Specimens of this species were obtained at Memphis and at Jackson. It may be worth noting here that it occurs as far north as Indianapolis, and I have seen it here during the present winter.

7. *Parus carolinensis*, Aud. CAROLINA CHICKADEE.—Seen only at Memphis.

8. *Thryothorus ludovicianus* (Gm.) Bonap. CAROLINA WREN.—We observed this active bird at Memphis and at Jackson, at both of which places it appeared to be very abundant.

9. *Mniotilta varia* (Linn.) Vieill. BLACK-AND-WHITE CREEPER.—Observed at Memphis and Jackson. It will probably be found to breed at both these points.

10. *Protonotaria citrea* (Bodd.) Baird. PROTHONOTARY WARBLER.—Specimens of this species were shot at Memphis, and others were seen at Jackson.

11. *Parula americana* (Linn.) Bp. BLUE YELLOW-BACKED WARBLER.—This was found to be one of the most common of the smaller birds at Memphis, Vicksburg, and Jackson. We were constantly shooting them while hunting for other species. In the "History of N. A. Birds" it is said to be nowhere abundant; but a day's hunt in the Mississippi lowlands would, I think, convince any ornithologist that this is an error. I have no doubt whatever that it breeds all through the South, although we found no nests. Audubon was probably correct in saying that it breeds in Louisiana, however much he may have erred in regard to the structure of the nest.

12. **Oporornis formosa** (Wils.) Baird. KENTUCKY WARBLER.—This sprightly little bird was observed, and specimens were handled, at both Vicksburg and Jackson.

13. **Geothlypis trichas** (Linn.) Caban. MARYLAND YELLOW-THROAT.—A specimen was shot at Memphis; others were seen.

14. **Myiodiotes mitratus** (Gmel.) Aud. HOODED WARBLER.—Specimens, male and female, of this bird were obtained at Jackson. It appeared to be moderately common.

15. **Setophaga ruticilla** (Linn.) Swains. AMERICAN REDSTART.—During our stay at Hopefind, Ark., opposite Memphis, a number of specimens of the Redstart were seen. Afterwards, while at Jackson, about July 10, a male and a female were killed. Their presence so far south at this season, and in such numbers, would indicate that they breed here, Up to this time I am not aware that it is known to breed south of the Potomac River and Illinois. The finding of the nest and eggs in Mississippi may be expected.

16. **Vireosylvia olivacea** (Linn.) Bonap. RED-EYED VIREO.—Very abundant at all the stations visited. Its clear, musical notes could be heard everywhere in the deep forests. A specimen was shot at Vicksburg, which had apparently just become fledged. Memphis, Vicksburg, Jackson.

17. **Vireo noveboracensis** (Gmel.) Bonap. WHITE-EYED VIREO.—Specimens of this Vireo were obtained at Memphis and at Jackson.

18. **Lanius ludovicianus**, Linn. LOGGERHEAD SHRIKE.—A specimen of Shrike was seen at Jackson; but, as it was not shot, I am unable to say whether it belongs to this variety or to *excubitoroides*.

19. **Progne subis** (Linn.) Baird. PURPLE MARTIN.—Common about Vicksburg.

20. **Hirundo erythrogastra**, Bodd. BARN SWALLOW.—This species was observed to be quite common about Jackson together with the next.

21. **Tachycineta bicolor** (Vieill.) Caban. WHITE-BELLIED SWALLOW.—Seen flying about the outskirts of Jackson.

22. **Cotile riparia** (Linn.) Boie. BANK SWALLOW.—Seen at various points along the Mississippi River near Memphis.

23. **Pyranga æstiva** (Linn.) Vieill. SUMMER REDBIRD.—A male of this species was shot at Memphis, another at Vicksburg, and a male and a female at Jackson. It is apparently a very common bird.

24. **Spizella pusilla** (Wils.) Bonap. FIELD SPARROW.—A single specimen of this species was shot at Jackson. Its occurrence there at that season was hardly to be expected. This individual may have been left behind in its winter quarters by its migrating comrades; or it may be that the species will be found to breed even as far south as Jackson.

25. **Cardinalis virginianus** (Briss.) Bonap. CARDINAL GROSBEEK.—One of the most conspicuous birds at every point visited.

26. **Passerina cyanea** (Linn.) Gray.—INDIGO BUNTING.—The Indigo Bird was observed at Memphis, and again at Jackson.

27. *Passerina ciris* (Linn.) Gray. PAINTED BUNTING.—This beautiful bird was seen at the crossing of the Vicksburg and Meridian R. R. over the big Black River, and again at Jackson. Females were shot at both places, but the males eluded capture. They seem to be quite common.

28. *Spiza americana* (Gm.) Bonap. BLACK-THROATED BUNTING.—Seen in the lowlands along the river in Louisiana opposite Vicksburg.

29. *Agelæus phœniceus* (Linn.) Vieill. RED-WING BLACKBIRD.—Very abundant in the swamps in the vicinity of Vicksburg.

30. *Sturnella magna* (Linn.) Swains. MEADOW LARK.—Not many were seen. One specimen at Vicksburg, and another along the railway while *en route* to Jackson.

31. *Icterus spurius* (Linn.) Bonap. ORCHARD ORIOLE.—Many of these were observed, and some shot, in Louisiana opposite Vicksburg.

32. *Icterus galbula* (Linn.) Cones. BALTIMORE ORIOLE.—Quite common at Memphis and at Vicksburg.

33. *Quiscalus purpureus* (Bartr.) Licht. PURPLE GRACKLE.—Common at Memphis and at Vicksburg.

34. *Corvus frugivorus*, Bartr. COMMON CROW.—Seen at Memphis, Vicksburg, and at several intermediate points along the river.

35. *Cyanocitta cristata* (Linn.) Strickl. BLUE JAY.—A common bird at Memphis and Vicksburg.

36. *Tyrannus carolinensis* (Linn.) Temm. KINGBIRD.—A very common bird at Memphis and Vicksburg.

37. *Myiarchus crinitus* (Linn.) Caban. GREAT CRESTED FLY-CATCHER.—Seen at all points visited. Apparently more common than at the North.

38. *Contopus virens* (Linn.) Caban. WOOD PEWEE.—This bird was found to be quite common at Memphis and at Jackson.

39. *Empidonax acadicus* (Gmel.) Baird. ACADIAN FLYCATCHER.—A specimen was shot at Jackson.

40. *Trochilus colubris*, Linn. RUBY-THROATED HUMMINGBIRD.—A single specimen was shot at Vicksburg.

41. *Chætura pelagica* (Linn.) Baird. CHIMNEY SWIFT.—Seen flying about at Jackson.

42. *Chordeiles popetue* (Vieill.) Baird. NIGHT HAWK.—Observed at Jackson.

43. *Campephilus principalis* (Linn.) Gray. IVORY-BILLED WOOD-PECKER.—No specimens of this species were seen, but their existence in the denser and less frequented forests in the neighborhood of Vicksburg and at other points, was confirmed by hunters and trappers. It is possible that the bird referred to here is the Logcock (*Hylotomus pileatus*), but as special mention was made by my informant, a professional hunter, of the white bill, I think the Ivory-billed Woodpecker must have been seen. Doubtless the other bird also occurs.

44. *Picus pubescens*, Linn. DOWNY WOODPECKER.—A single individual of this species was obtained at Vicksburg.

45. *Melanerpes erythrocephalus* (Linn.) Sw. RED-HEADED WOODPECKER.—This Woodpecker is apparently not so common as at the North, but it was observed at Memphis, Vicksburg, and Jackson.

46. *Colaptes auratus* (Linn.) Sw. YELLOW-SHAFTED FLICKER.—A not uncommon bird about Vicksburg.

47. *Ceryle alcyon* (Linn.) Boie. BELTED KINGFISHER.—Quite common. Seen at Memphis and Vicksburg and intermediate points along the river.

48. *Coccyzus americanus* (Linn.) Bonap. YELLOW-BILLED CUCKOO.—Apparently common. A specimen was secured at Vicksburg.

49. *Conurus carolinensis* (Linn.) Kuhl. CAROLINA PARAKEET.—None were seen by ourselves. Inquiry concerning this rapidly disappearing species was made of various persons, and especially of hunters. It is still occasionally seen; but, for the most part, it maintains itself in the dense cane-brakes and forests, away from contact with man. I heard of its having been seen recently along the Mississippi River, about half way down the state of Mississippi; also that it had been seen in southeastern Arkansas. A gentleman in Jackson stated that he had, within a year or two, seen a flock of Parakeets pass over that city. These items, together with the information obtained by Dr. F. W. Langdon, communicated in his recent paper, would indicate that this bird has not yet disappeared from the Mississippi Valley.

50. *Scops asio* (Linn.) Bonap. LITTLE SCREECH OWL.—A single individual of this species, in the shabbiest of plumage, was shot along the Big Black River between Vicksburg and Jackson.

51. *Buteo lineatus* (Gm.) Fard. RED-SHOULDERED HAWK.—A specimen of this hawk\* was shot and brought to me by a hunter at Jackson.

52. *Cathartes aura* (Linn.) Illig. TURKEY BUZZARD.—A common bird everywhere. Seen in great numbers at Jackson in company with the next.

53. *Catharista atrata* (Wils.) Less. CARRION CROW.—Not observed at any place but Jackson, although doubtless common everywhere. Readily distinguished from the Turkey Buzzard by its smaller size and its manner of flight.

54. *Zenaidura carolinensis* (Linn.) Bonap. MOURNING DOVE.—Common everywhere. Memphis, Vicksburg, Jackson.

55. *Meleagris gallopavo americana* (Bartr.) Coues. WILD TURKEY.—None were seen, but hunters stated that they were quite abundant, even in the immediate vicinity of the city of Jackson. In the spring of 1880 I saw a fine gobbler that had been shot by a party of hunters in the pine woods of Kemper County, near the eastern border of the State.

56. *Ortyx virginiana* (Linn.) Bonap. BOB WHITE.—The call notes of these birds were frequently heard as we passed down the river. At Vicksburg they appeared to be abundant in the bottom lands. We were extremely sorry that we could procure none of their skins.

57. *Ardea herodias* Linn. GREAT BLUE HERON.—Several of these birds were seen flying about in the swamps near Vicksburg.

58. *Herodias alba egretta* (Gmel.) Ridgw. AMERICAN EGRET. — A number of this snow-white species were observed in the swamps across the "lake" from Vicksburg. One was shot, and was found to have the long dorsal train of plumes.

56. *Oxyechus vociferus* (Linn.) Reich. KILLDEER. — Observed only at Vicksburg. Will probably be found to breed here.

60. *Philohela minor* (Gmel.) Gray. AMERICAN WOODCOCK. — One specimen was shot at Vicksburg.

61. *Sterna antillarum* (Less.) Coues. LEAST TERN. — This beautiful little Tern was very abundant on a sandy point across the "lake," or old bend of the river, opposite Vicksburg. We were told that these birds lay their eggs on the bare sand, and that these eggs hatch in an extraordinarily short time.

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## IMPRESSIONS OF SOME SOUTHERN BIRDS.

BY WILLIAM BREWSTER.

LOOKING back on my first winter in the South I can recall no pleasanter experience than that of a stay of some four weeks at St. Mary's, a town situated on the very border line of Southern Georgia. This place was then scarcely known to Northerners, although the crowded Florida steamers, on their way across Cumberland Sound, passed within sight of it and occasionally even touched at its wharf for some chance freight or a supply of fuel. But the village still retained a primitive quiet and simplicity that was all the more restful from its contrast with the bustling world outside. Now there are rumors of a railroad and daily trains from Savannah, with all the accompanying desecrations. It is a pity that the march of modern improvements cannot spare a few such peaceful spots, but the "levelling process" seems universal and inevitable.

A Northerner passing his first spring in the South will miss the marked distinction between the seasons upon which he has been accustomed to rely. The vegetation does indeed take a partial rest during the winter months, but it is checked rather than suppressed, and the reign of summer begins without that interval of preparation which we call spring. Most of the trees



are evergreen, but some of them, curiously enough, assume bright autumn tints and cast their leaves in April. This at least is true of the live-oaks and magnolias: during my stay at St. Mary's one of the latter, a remarkably fine tree which I often passed in my daily walks, was at one time nearly denuded, while the ground beneath was strewn with scarlet and orange-tinted leaves.

By the middle of April the fields and forests wore that mature appearance which we associate with August and early September. At noonday cicadas shrilled in the sultry woods, and crickets chirped all night long in the shrubbery about the house. Yet few birds had begun to nest, and many of the northern ones still lingered. I saw Yellow-rumped Warblers, Blue Yellow-backed Warblers and Cedar Birds nearly to the end of April, and a White-throated Sparrow as late as May 2. Many of the Blue Yellow-backed Warblers remained to breed, or rather *were breeding*, for long before this (on April 9) I had found a nearly finished nest. The local birds, however, did not mingle with the strangers, the former being found in pairs, and only where the trees were hung with Spanish moss; while the latter occurred in all kinds of timber, and in flocks made up largely of Redstarts, Kinglets, Black-poll Warblers and other northern species. The same was true of the Catbirds, Brown Thrushes, Pine Warblers, Towhees and several others. It was especially marked in the case of the Towhees, for the resident individuals belonged to a different and readily recognizable race.

One needed but to pass the boundaries of St. Mary's to be fairly in the country, for the village had not then overflowed its limits, and the few outlying plantations were scarcely less wild and unkempt than the woods which surrounded them. One of my favorite haunts was the "Bay-gall" (I could never learn the origin of this name), a tract of swampy forest less than a quarter of a mile distant from the house at which we were staying. This place was sure to be alive with birds, and I rarely entered it without making some pleasing discovery. My first visit was on April 6, the day after our arrival. As I approached the woods a Red-bellied Woodpecker started from a solitary tree within a few feet of my head, and alighting at the base of one near by scrambled hurriedly up, dislodging the scales of loose bark in his ascent. He was immediately joined by his mate and

the two began a game of hide-and-seek around the trunk and among the branches, uttering a rolling *wor'r'r'roo* very like that of a Flicker.

Forcing my way through the brambly outskirts, I entered the swamp and paused a moment to look around. Grand old water-oaks and sweet-gums thickly hung with Spanish moss cast a dense shade over the ground beneath, and the few sunbeams that struggled through flickered in the gloom like dying torches. There was little undergrowth, and the eye could penetrate far in every direction. In the branches above Blue Yellow-backed Warblers were singing incessantly, and occasionally the note of a Great-crested Flycatcher echoed sharply among the trees. There were other sounds; the rolling tapping of Woodpeckers, the shrill cry of the Blue Jay; and, from the clearing outside, pleasantly softened by distance, the songs of Mockingbirds and Cardinal Grosbeaks.

Passing deeper into the forest I came to an opening where the morning sun lay warm on a thicket of bushes that surrounded a shallow pool. Here I found an interesting little company of tired migrants resting after the fatigues of their last night's journey and preparing for that still before them. There were six or eight Hooded Warblers, all males in full spring livery, a number of Worm-eating Warblers, a female Prothonotary Warbler, and several Ruby-crowned Kinglets and Redstarts. All were busily engaged in catching insects, but occasionally one of them would pause to sing a few notes in a listless undertone. The Prothonotary was the first that I had ever met with, and it was the only one that I saw at St. Mary's. The Hooded and Worm-eating Warblers were common for a week or more afterwards, when all departed for some more northern breeding-ground.

During subsequent visits to the "Bay-gall" I met many interesting birds, several of which were new to me. Occasionally I would startle a Chuck-will's-widow from its noonday slumbers on some mossy knoll, and if a chance shot through the leaves succeeded in stopping its erratic, bat-like flight, there was the pleasure of smoothing its soft plumage and admiring the rich brown coloring before consigning the bird to the paper wrapper that formed its temporary tomb. I believe I never shot one without indulging-myself in this way. There is much to be learned, too, from the examination of a freshly-killed bird. For instance,

I had never known the wonderful beauty of this Goat-sucker's eye until I held the bird in my hand, and the size of its mouth would hardly be suspected from the examination of a dried skin.

On April 17 the Acadian Flycatchers arrived. I was first made aware of their presence by their emphatic *queep' éep* which so closely resembled that of Traill's Flycatcher that I immediately suspected the identity of the singers, although it was some time before I could get a sight at one. They had another note also which was much like the whistling of wings. I afterwards satisfied myself that this sound was a vocal one.

I never left the "Bay-gall" without reluctance in the days when I was perhaps the only invader of its secret recesses; and now, in recalling it, the feeling is scarcely less strong. But the country about St. Mary's held other attractions which must not be neglected. The open space surrounding the town was bordered on the north by a pine forest that stretched an indefinite number of miles into the interior, and my walks often tended in this direction. Following some grass-grown road that wandered aimlessly among the trees, I often paused to watch the gambols of the Brown-headed Nuthatches which fairly swarmed in these woods. They are exceedingly social little birds, and it was no uncommon thing, even in the middle of their breeding season, to see five or six rollicking together. In their motions they closely resemble *Sitta canadensis*, and they have the same habit of exploring the ends of the pine branches and hanging head downward, like Titmice, among the tufts of pine needles. But they are decidedly more active, and their notes are shriller, more varied and altogether unlike those of either the Red or White-bellied species. *Whick-whick-wheel'e'e' whick-whicker-whicker* is the usual utterance, but when several come together their shrill excited piping altogether baffles description. These little companies were by no means wholly composed of Nuthatches, but usually included a more or less numerous escort of Pine Warblers, Bluebirds, Titmice and Woodpeckers. As the motley troop rambled through the woods, its members were continually chasing one another from tree to tree, chirping, calling and singing as their various moods dictated. I noticed that the Bluebirds usually led the van, while the Woodpeckers invariably brought up the rear. Unlike the Red-bellied, Downy, Hairy and Golden-winged species, which inhabited all sorts of timber, the Red-cockaded

Woodpecker was exclusively a bird of the pines. It was not common about St. Mary's and I had difficulty in getting as many specimens as I wanted. Its notes to my ear almost exactly resembled those of *Sitta pusilla*. On the 1st of May I started a female from her nesting-hole, which was about thirty feet above the ground in a large and apparently perfectly sound pine. I was unable to climb the tree but the bird acted as if her eggs had already been laid.

The pine lands of the South have an open park-like character that is a continual surprise to one accustomed only to New England forests. The trees rarely stand in close proximity to one another, and they are often so widely scattered that the general effect is that of an opening rather than a forest. Unless a hummock interrupts the view, the eye may sometimes roam for half-a-mile in every direction over a perfectly level plain, interspersed with occasional trees whose tufted heads throw waving shadows upon the bright green beds of saw-palmetto that cover most of the ground beneath. Were it not for the half-wild cattle that range at will through the country, the palmetto would probably usurp every inch of ground; but these creatures keep it within reasonable limits, and many spaces of closely cropped grass and stunted blueberries intervene. About such places I used to find the Bachman's Finch, a retiring little bird which might easily be overlooked by one unacquainted with its habit of skulking among the herbage and lying concealed until nearly trodden on. But no one with the slightest ear for bird music can long remain in ignorance of its presence after the breeding-season has set in, for the male possesses vocal powers of a very rare order. His song is a prolonged, leisurely chant composed of several distinct bars or sets of notes, with brief pauses between, as if the bird stopped to take breath. The final notes of each bar have sometimes a rising, sometimes a falling, inflection, and the tone is varied in the most subtle manner. Now it has a full bell-like ring that seems to fill the air around; next it is soft and low and inexpressibly tender; now it is clear again, but so modulated that the sound seems to come from a great distance. The whole performance is very simple and I hardly know the secret of its charm. To be fully appreciated it should be heard in the soft twilight of an April evening, when the still woods are filled with dusky shadows. At such times it has moved me more deeply than I care to confess.

The male always sings from an elevated perch, usually a dead twig close to the trunk of a southern pine. He sits perfectly motionless and is unaccountably hard to see. I have often stood directly beneath one for several minutes, vainly straining my eyes in the direction from whence the sound came, and perhaps finally discovered him within ten feet of my head in plain view. The ventriloquous character of many of his notes increases this difficulty. If disturbed in the midst of his song, he pitches to the ground beneath and at once seeks shelter in the grass.

Another characteristic inhabitant of these grassy openings was the Meadow Lark. It was much tamer than our northern bird, and its notes had a wild, ringing inflection that harmonized well with the surroundings.

In the thicker groves I often heard the voice of the Summer Tanager (*Pyranga aestiva*). His song is rich, flowing, and not unlike that of the Rose-breasted Grosbeak, although some of its notes recall those of the Robin. The call-note used by both sexes is a peculiar *chuck'l-chuck'l'ut*. The bright colors of the male make him a conspicuous object among the branches of the southern pine which, at least in Georgia, is his favorite tree.

The Yellow-throated Warbler also was sure to be met with in these walks. His song to my ear has a far-a-way sound, even when the bird is near at hand. It is simple and monotonous, but nevertheless sweet and plaintive. This bird has all the habits of the Pine Warbler, with which it often associates.

A totally different phase of bird-life was presented when, as was often the case, I visited the plantations. The fields themselves rarely offered anything more attractive than Yellow-winged Sparrows, Grass Finches and, late in April, migratory troops of Bobolinks that settled among the last year's weeds for a moment before resuming their northward journey with rollicking snatches of song. But the fence corners and similar neglected places around the outskirts of the cultivated lands were filled with bushes over which trailed Cherokee roses, trumpet-vines and other luxuriant creepers. In these places I was sure to find Mockingbirds, Cardinals, Catbirds, Brown Thrushes, White-eyed Vireos and the brilliant little Painted Buntings.

Next to the always self-assertive Mockingbird the White-eyed Vireo was perhaps the most conspicuous inhabitant of such thickets. Not that he was often seen, but at almost any time of

the day one might hear his emphatic, jerky little strain, coming from half-a-dozen points at once. I noticed that the note varied considerably from that which we hear in New England, and, moreover, scarcely two of the southern birds sang exactly alike. Some individuals even seemed to have a talent for mimicry. One that I remember imitated the note of the Loggerhead Shrike so closely that I was completely deceived. The nest of this bird is a wonderfully delicate and beautiful structure. One that I got at St. Mary's contained its complement of four eggs on April 26. I discovered it twelve days previously when the birds were busily employed on the framework. The male took an equal part in this task and it was amusing to see him try to sing with his bill full of moss or bark.

The Painted Buntings or Nonpareils, as they are universally called by the townspeople, arrived April 23 and through the remainder of the month were abundant. I used to find them in flocks about the openings where they spent much of their time on the ground. They were timid rather than shy, flying to the thickets upon the slightest alarm, but when once conscious of being pursued, it was difficult to get a shot at one. The brilliant plumage of the adult male makes him a conspicuous object either on the ground or in green foliage, but it is no easy matter to see one among the flowers of the trumpet-vine where they often seek refuge, apparently fully conscious of the protection afforded by the clusters of scarlet blossoms. The young males during the first year are colored precisely like the females. They sing, and for aught I know, breed, while in this condition. The song is a low, pleasing warble very un-Finch-like in character. I should compare it to that of the Canada Flycatcher, but the notes are less emphatic, though equally disconnected. The bird almost invariably sings in the depths of some thicket, and its voice ceases at the slightest noise. Both sexes have a sharp chirp of alarm which closely resembles that of the Indigo Finch. Most of the Nonpareils left St. Mary's by May 1, but a few pairs remained up to the time of my departure, when they were apparently preparing to breed. Another familiar inhabitant of these thickets was the Towhee Bunting. Two distinct races of this bird were to be met with during the same walk, but never, so far as my observation went, actually in company. The Red-eyed or northern form, *erythrophthalmus* proper, apparently occurred only as a winter

visitor, while var. *alleni* represented the resident or local race. The latter was chiefly a bird of the oak scrub, although it was also to be found in open pine woods where it haunted the beds of saw-palmetto. Its note differed widely from that of *erythrophthalmus*; the "*chewink*" was shorter and harsher, and in addition to this cry, both sexes occasionally uttered a sharp, clear whistle that sounded like a sportsman's call to his dog. I am not sure that I heard the song, or at least identified it. These Towhees were hard to obtain, for they were shy and retiring, rarely venturing far from their secure retreats. The irides of all the specimens that I examined were brownish-yellow or dull, opaque amber; never white, as is said to be the case with examples from Southern Florida.

It would be difficult to find a plantation in the South that did not have one or more pairs of Mockingbirds. About St. Mary's they were especially abundant, and nowhere more so than in the gardens of the village. Here they were half-domesticated, building their nests in the shrubbery that surrounded the houses, and hopping about, like Robins, upon the grass-plats and gravelled walks. An orange tree directly in front of the windows of my room was appropriated by a remarkably fine singer. There is a noticeable difference in the performances of most males, but the voice of this bird possessed a compass and perfection of tone that I have never heard equalled. His repertoire included the notes of nearly all the birds of the surrounding region besides many of the characteristic village sounds, and most of the imitations were simply perfect. Moreover he was continually adding to his accomplishments. An interesting instance of this occurred one afternoon, when several of us were sitting on the veranda. A Greater Yellow-leg passing over the town was attracted by my answering whistle, and circled several times above the house reiterating his mellow call. The Mockingbird up to this time had been singing almost uninterruptedly, but at the sound of these strange notes he relapsed into silence and retreated into the thickest foliage of his favorite tree; after a while we heard him trying them in an undertone. The first note came pretty readily, but the falling inflection of the succeeding three troubled him. Whenever I ventured to prompt he would listen attentively, and at the next attempt show an evident improvement. Finally he abandoned the task, as we thought in

despair, and at sunset that evening for the first and only time during my stay his voice was missing in the general chorus. But at daylight the next morning the garden rang with a perfect imitation of the Yellow-leg's whistle. He had mastered it during the night, and ever afterwards it was his favorite part. The discomfiture of the rival males in the neighborhood was as amusing as it was unmistakable. Each in turn tried it, but not one of them succeeded.

Another frequenter of the village shrubbery was the Orchard Oriole. His flute-like voice, which bears some resemblance to that of the Fox Sparrow, could be heard almost any time after April 10. Our garden offered especial attractions to these Orioles, for the hedge of wild olive trees that bordered it on two sides was overrun with Cherokee roses and trumpet-vines among which they found a congenial shelter. They were fond, too, of sipping the honey from the trumpet-flowers, and it was no uncommon thing to see half-a-dozen collected about a single cluster. In this occupation they were almost invariably joined by numerous Hummingbirds;—and such a group, with its setting of green leaves and scarlet and white blossoms, formed the prettiest picture imaginable.

To our garden also came the Blue Jays; bold, familiar birds very different in bearing from the outcast that boys and would-be sportsmen pursue so relentlessly in the northern woods. Everywhere at the South this Jay is as much an inhabitant of the cultivated grounds as of the forests, and if not actually encouraged, it is universally tolerated. In Jacksonville I have heard them screaming among the live-oaks that shade the busiest streets, and at St. Mary's they were scarcely less tame and confiding than the Mockingbirds.

The average Georgian is indifferent to the shooting of most of the birds that inhabit his plantation; but it is little short of a crime in his eyes to take the life of either a Turkey Buzzard or a Mockingbird. The killing of one of the former is considered an offence against the State, which protects them on account of their services as scavengers. But the Mockingbirds are treasured as personal property, and any interference with them is sure to be promptly resented. The natural result of this sentiment is that both species are universally abundant and familiar. The Buzzards, especially, are ubiquitous. At



all hours of the day, in every kind of weather, they float over the cities, villages, plantations, pine woods, hummocks, cypress swamps, salt marshes and even the beaches of the Sea-islands. Go where you will, it is almost impossible to look upward without seeing the picturesque forms drifting about in the sky. Some are soaring almost beyond the reach of human vision. Others at a lower elevation cross and recross each other in interminable mazy lines; while still others glide across the landscape passing just above the tops of the trees. Both species occurred at St. Mary's, but the Black Vulture was much the less common. It associated freely with the Turkey Buzzards, among which it could be recognized at almost any distance by its different color, shape and manner of flying. The tail is so short as to be altogether out of proportion with the body and wings, while its square tip gives it the appearance of having been cut off. This bird's flight is heavy, awkward and generally straight forward, although it occasionally soars. The wings are flapped every few seconds in a hurried, nervous manner that seems to betoken a lack of power or confidence. The flight of the Turkey Buzzard, on the contrary, is a picture of repose in motion. The bird rarely moves its wings, save to alter their inclination, and its dark form drifts through miles of space without the slightest perceptible effort. The impression of entire freedom from exertion which its movements convey, is curiously in accord with the general enervating influence of southern life and its surroundings. Its impassive flight may perhaps be regarded as the most characteristic feature of a southern landscape, as it certainly is one of the most attractive. But the observer who would keep this impression untarnished will be wise to refrain from looking too closely into the *useful* side of the bird's character.

The Buzzard's flight will not bear comparison however with that of the Swallow-tailed Kite. The latter is equally easy and graceful of wing, and, in addition, its movements are characterized by a certain dash and energy of purpose that one looks for in vain in the calm, emotionless flight of the Vulture. I hardly know a more attractive sight than that presented by one of these Kites playing about an opening in the woods. For a moment it floats motionless, as if suspended by an invisible wire; the next, it glides close over the ground crossing and recrossing every yard

of space. The long, thin wings, firmly set, cleave the air like knife-blades and the forked tail, spread to its fullest, is inclined to one side or the other as the bird changes its swift course. When it turns, the snowy head and breast are contrasted against the green background and its steel blue back glances in the sunlight. Finally rising to a level with the tree-tops it is gone as it came, like a beautiful vision.

But my space is exhausted, although many interesting birds remain to be mentioned. Perhaps at some future time I may take up the threads where this sketch leaves them.

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## NOTES ON SOME OF THE RARER BIRDS OF SOUTHERN NEW BRUNSWICK.

BY MONTAGUE CHAMBERLAIN.

1. *Sialia sialis*. BLUEBIRD.—About the middle of March, 1877, Mr. Harold Gilbert saw one at Mount Pleasant, a suburb of St. John. Some time early in June, 1879, Mr. J. W. Banks saw one at Milledgeville, with food in its mouth, apparently for its young. On April 26, 1881, Mr. Henry Gilbert shot one at Rothesay, nine miles north of St. John.

2. *Dendroeca pennsylvanica*. CHESTNUT-SIDED WARBLER.

3. *Dendroeca castanea*. BAY-BREADED WARBLER.

4. *Dendroeca blackburnæ*. BLACKBURN'S WARBLER.—These three species are but rarely found here. In my note-book is a record of one of each taken during the summer of 1881, and I can learn of none others having been seen or heard.

5. *Vireo noveboracensis*. WHITE-EYED VIREO.—Mr. Harold Gilbert shot one specimen of this bird at South Bay, a few miles northwest from St. John, on May 24, 1877, and this is the only known instance of its occurrence in this vicinity.

6. *Pyranga rubra*. SCARLET TANAGER.—I saw an adult male of this species sitting on a fence in the suburbs of St. John on June 20, 1879, and have examined two specimens taken near Hampton during the summer of 1880.

7. *Ammodromus caudacutus*. SHARP-TAILED FINCH.—On June 21, 1881, five individuals of this species were taken by Mr. H. A. Purdie, Mr. Fred. W. Daniel and myself, on a marsh near Hampton. This marsh is watered by the Kenebecasis, a tributary of the St. John, and lies some twenty-five miles up the former river. The junction of the two rivers

takes place about five miles from the mouth of the St. John. The marsh is some twenty miles, air line, from the nearest point on the Bay of Fundy shore, and at the time we visited it, the water running past it did not taste in the least brackish.\*

8. *Pipilo erythrophthalmus*. TOWHEE.—A specimen, now in the collection of the Natural History Society of St. John, was shot at Irish-town on May 8, 1881, by Mr. J. Belyea.

9. *Zamelodia ludoviciana*. ROSE-BREASTED GROSBEEK.—I have examined the skin of one of this species taken near Hampton in June, 1879.

10. *Passerina cyanea*. INDIGO BUNTING.—There is a skin in the collection of James McGivern, Esq., said to have been taken about six miles north of St. John in June, 1880. I can learn of no other occurrence of this bird near here, though I have frequently seen specimens taken on the western, or Bay of Fundy shore of Nova Scotia.

11. *Zenaidura carolinensis*. MOURNING DOVE.—This bird has been but rarely met with here; one taken at Hampton in June, 1880, one at Rothesay on September 30, 1881, and one at Milkish on October 17, 1881, are the only specimens I have heard of.

12. *Ardetta exilis*. LEAST BITTERN.—Between the spring of 1877 and the fall of 1880 there were five individuals of this species taken on the Bay of Fundy shore, about ten miles to the eastward of St. John.

13. *Micropalama himantopus*.—STILT SANDPIPER.—The only known occurrence of this bird in this vicinity is of three seen by Mr. F. W. Daniel on the sand flats back of St. John on September 8, 1881. He secured one of them, which is now in the museum of the Natural History Society.

14. *Recurvirostra americana*. AVOCET.—Mr. William Ellis of St. Martins, a village on the shore of the Bay of Fundy, says he has shot one or more of these birds each year for the last five years, usually meeting two together. A specimen taken by him in 1880 is in the museum of the Natural History Society.

15. *Himantopus mexicanus*. BLACK-NECKED STILT.—I procured one of this species in September, 1880, from Mr. John Ellis of Mace's Bay, an arm of the Bay of Fundy, lying some thirty miles to the westward of St. John, and was told by Mr. Ellis that several had been taken there during former years.

16. *Ionornis martinica*. PURPLE GALLINULE.—Since obtaining the male, announced by Mr. Wm. Brewster in this Bulletin for July, 1881, I have had the good fortune to get possession of a female which was shot near Gagetown, a village on the St. John River, about forty miles from its mouth. The bird was taken in the early part of September, 1880.

17. *Chen hyperboreus*. SNOW GOOSE.—One of these birds was taken at Gagetown in December, 1880, and sent by me to Mr. E. O. Damon of Northampton, Mass.

18. *Anas boschas*. MALLARD.—A pair in the museum of the Natural History Society were shot near Hampton by the late Col. Otty some fifteen years ago. The only late occurrences of this species are of one mounted

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\* [See p. 122 of this issue.—EDD.]

by J. H. Carnell, taxidermist, and a flock of some six or eight seen by Mr. Henry Gilbert on the Kenebecasis River in August, 1880, from which he obtained a male and female.

19. *Æthya vallisneria*.—CANVAS-BACK.—Carnell has mounted one of this species taken within the Province, and E. C. Sutton, Esq., of Sutton, who is familiar with their appearance, saw a flock on the St. John River, about four miles from the city, several times during the fall of 1879.

20. *Pelecanus erythrorhynchus*. AMERICAN WHITE PELICAN.—One of these birds in the collection of the Natural History Society was shot on the shore of the Gulf of St. Lawrence near Pt. du Chene by Mr. Robert Bustin, and I have very good authority for announcing the occurrence of another at Cape Spencer, some five miles east of St. John, during the first week in April, 1881.

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## NOTES ON THE SUMMER BIRDS OF THE UPPER ST. JOHN.

BY CHARLES F. BATCHELDER.

DURING the spring of 1879 Messrs. W. A. Jeffries and J. Amory Jeffries spent some time at Grand Falls, New Brunswick, collecting and studying the birds of that neighborhood; and at about the same time Mr. J. Dwight, Jr., and myself were similarly engaged at Fort Fairfield, Aroostook Co., Maine.

Owing to the limited time of our stay the number of species observed was not large, but as it included almost all the commoner summer residents,—the species really characteristic of the fauna of the region—it has been thought worth while to lay the results of our observations before the public, especially as the fauna is in some respects peculiar. One might be led to expect, from the latitude of the region, that the fauna would be thoroughly Canadian in its character. Our experience shows, however, that it has a strong tinge of the Alleghanian.

Grand Falls is situated on the right bank of the St. John River at about N. Lat.  $47^{\circ} 03'$ , and W. Long.  $67^{\circ} 50'$ . The river below the falls runs through a narrow valley, almost all of which is under cultivation. On the higher land above the falls and about the town are farms devoted chiefly to hay, potatoes and buckwheat. The country is hilly, and is scantily watered, the few

rapid streams and brooks draining directly into the river. There are no lakes or ponds, except a few insignificant puddles, although there are occasional cedar swamps and "barrens." The tributary streams below the falls have cut narrow steeply walled ravines in their passage to the river. These were cold and damp, and apparently without birds.

In some places forests of hard woods exist, tall maples, elms and birches that have no doubt stood there for ages. There is but little underbrush in these woods, and they have a rather park-like aspect. The second growth and the woods on the low lands along the river consist of firs, spruces and hemlocks of all sizes, and often have an almost impenetrable underbrush. Where fires have spread large tracts are stripped of their woods, and are covered with fallen trunks overgrown with vines, with here and there tall dead "stubs" still standing.

Mr. W. A. Jeffries' observations extended from May 21 to June 19. He was joined by his brother on the 9th of June. During the ten days following this latter date the weather was cold—there was a frost June 15, and rain fell every day except the 9th and the 15th.

Fort Fairfield is twenty miles south of Grand Falls. It is situated on the Aroostook River, about five miles in an air line west of its junction with the St. John. It is in a rolling country containing but few ponds and swamps, and watered merely by small brooks which empty into the Aroostook River. The river itself is broad, with a rapid current, and flows between banks which though not very high, are yet never swampy. Much of the original forest has been removed, especially in the neighborhood of the town and along the river, where the stretches of wooded land are interspersed with clearings, pastures and cultivated fields, large crops of buckwheat and potatoes being raised on the fertile soil. The woods are mostly evergreen—the several species of *Abies* and the arbor vitae—intermingled, of course, with a few yellow birches and an occasional maple, but few tracts being wholly covered by deciduous trees.

Our collecting was done mostly within two or three miles of the town. Our notes were made between June 14 and July 1. On our arrival we found the trees by no means in full leaf, and were told that the season was very backward, and had been very wet. Heavy frosts occurred on the 15th and 19th of the month.

The nights were generally cold, the days warm — even hot during the latter part of our stay.

Fort Fairfield is 415 feet above the sea, and has a mean annual temperature of 38.11° F.

Through the kindness of Mr. H. A. Purdie I have been enabled to supplement our observations by extracts from some manuscript notes on the birds occurring at Houlton, Maine, made by Mr. Robert R. McLeod. These notes were written in 1877, and are based on his experience during a residence of four years at Houlton.

This town is in the southeastern part of Aroostook County, on the Meduxnekeag River about twelve miles from its junction with the St. John. It is forty-five miles south of Fort Fairfield, its Latitude being 46° 8'. I quote the following from Mr. McLeod's notes: "The country round about is well watered with lakes and streams. Much of the land is under cultivation, but where it is not, the old forests are standing in great tracts of many miles in extent. The first snow falls about the 10th of November, and it generally remains on the fields till the middle of April, and in the woods until the last of May."

At each locality several species, that would doubtless have been much more abundant had local conditions been favorable, were absent or represented by but few individuals.

All statements are given on the authority of both the observers at the locality to which they refer, except in some few cases, in which the initials of the observer are appended. All references to Houlton are, unless otherwise stated, on the authority of Mr. McLeod.

1. *Turdus migratorius* Linn. ROBIN.—Rather common at Fort Fairfield. At Grand Falls it was abundant everywhere.

2. *Turdus fuscescens* Steph. WILSON'S THRUSH.—Rare at Grand Falls. On June 16 a nest with four fresh eggs was found on top of a stump. Not met with at Fort Fairfield. Mr. McLeod says that it appears at Houlton by May 15, and by the 10th of June becomes common. Breeds.

3. *Turdus pallasi* Caban. HERMIT THRUSH.—Common. One nest taken May 30 at Grand Falls was about three feet from the ground in a small fir tree.

4. *Turdus ustulatus swainsoni* (Caban.) Coes. OLIVE-BACKED THRUSH.—Common at Grand Falls, especially in the hard woods and more open fir woods. At Fort Fairfield it appeared to be rather common, though seldom seen. Common and breeding at Houlton.

5. *Mimus carolinensis* (Linn.) Gr. CATBIRD.—At Houlton "very rare. A pair has bred in this vicinity each year since I have been here" (R. R. McL.). Not met with at Fort Fairfield or Grand Falls.

6. *Sialia sialis* (Linn.) Hald. BLUEBIRD.—At Grand Falls they were frequently seen, as many as seven or eight in the course of a day. Apparently not common at Fort Fairfield. At Houlton "very rare," one pair breeding.

7. *Parus atricapillus* Linn. BLACK-CAPPED CHICKADEE.—At Grand Falls it was not uncommon. Some days four or five pairs would be seen, on others none at all. At Fort Fairfield it was not very common, though seen occasionally. At Houlton "very common."

8. *Parus hudsonicus* Forst. HUDSONIAN CHICKADEE.—About half a dozen were seen at Grand Falls, mostly in hardwood brush or small woods. It was not seen at Fort Fairfield.

9. *Sitta carolinensis* Gmel. WHITE-BELLIED NUTHATCH.—Common in the hard woods at Grand Falls. Breeding.

10. *Sitta canadensis* Linn. RED-BELLIED NUTHATCH.—One shot at Fort Fairfield. Both species are said to be common at Houlton.

11. *Certhia familiaris* Linn. BROWN CREEPER.—Seen occasionally at Fort Fairfield. Breeds. Rare at Grand Falls. "Common" at Houlton.

12. *Troglodytes aedon* Vieill. HOUSE WREN.—At Grand Falls one pair was noticed which had a nest in the frame work of a barn.

13. *Anorthura troglodytes hyemalis* (Vieill.) Coues. WINTER WREN.—This species is common at Houlton,\* and no doubt occurs throughout this region; it was seen and heard at Grand Falls, but not observed at Fort Fairfield.

14. *Mniotilta varia* (Linn.) Vieill. BLACK-AND-WHITE CREEPER.—We saw several at Fort Fairfield. Not seen at Grand Falls.

15. *Helminthophaga ruficapilla* (Wils.) Bd. NASHVILLE WARBLER.—Apparently not very common at Fort Fairfield. It was not observed at Grand Falls.

16. *Dendroeca aestiva* (Gmel.) Bd. YELLOW WARBLER.—Rather common at Fort Fairfield. Not met with at Grand Falls.

17. *Dendroeca caerulescens* (Linn.) Bd. BLACK-THROATED BLUE WARBLER.—Rather common at Fort Fairfield. At Grand Falls it was common in hard woods where the underbrush was thick.

18. *Dendroeca coronata* (Linn.) Gray. YELLOW-RUMPED WARBLER.—It was common at Fort Fairfield. At Grand Falls it was rare during May. All had left before the 9th of June.

19. *Dendroeca maculosa* (Gm.) Bd. BLACK-AND-YELLOW WARBLER.—Common.

20. *Dendroeca pennsylvanica* (Linn.) Bd. CHESTNUT-SIDED WARBLER.—Common.

21. *Dendroeca blackburnæ* (Gm.) Bd. BLACKBURNIAN WARBLER.—This bird was seldom seen while we were at Fort Fairfield, and was not met with at Grand Falls.

22. *Dendroeca virens* (Gm.) Bd. BLACK-THROATED GREEN WARBLER.—Rather common at Fort Fairfield. Not met with at Grand Falls.

\* For an account of its breeding at Houlton see this Bulletin, Vol. IV, pp. 37-39.

23. *Dendroeca tigrina* (Gm.) Bd. CAPE MAY WARBLER.—I shot a male at Fort Fairfield, June 23, in a thick second growth of spruces on the edge of a path.

24. *Siurus auricapillus* (Linn.) Swains. GOLDEN-CROWNED THRUSH.—Rather common at Fort Fairfield. At Grand Falls it was seen only in the hard woods, where it was not common.

25. *Siurus naevius* (Bodd.) Coues. WATER THRUSH.—Breeding at Fort Fairfield, but not very common. It was not met with at Grand Falls.

26. *Geothlypis philadelphia* (Wils.) Bd. MOURNING WARBLER.—Common in suitable places. It was almost sure to be found in "burnt lots," where the fallen trunks lay, half hidden by a luxuriant growth of tall weeds, or thickly overrun with vines. Under the shelter thus afforded they undoubtedly nested, safely screened from the most searching eyes.

27. *Geothlypis trichas* (Linn.) Caban. MARYLAND YELLOWTHROAT.—Common.

28. *Myiodiotes pusillus* (Wils.) Bp. WILSON'S BLACK-CAP.—At Fort Fairfield this bird was common. We usually found them in thickets of willow bushes, often in rather wet places. The birds were apt to go in companies of three or four or more. June 23 Mr Dwight caught a young bird, just able to fly two or three yards at a time. The nest was no doubt close at hand, but the ground among the willow bushes was covered so deeply with brush that a diligent search for the nest showed nothing—except that it was not built in the bushes. The youngster showed in the most marked way the energy of disposition and restless activity that characterize the adults. The species was not common at Grand Falls.

29. *Myiodiotes canadensis* (Linn.) Aud. CANADA FLYCATCHING WARBLER.—Rare at Grand Falls, but common at Fort Fairfield.

30. *Setophaga ruticilla* (Linn.) Swains. REDSTART.—This species was exceedingly abundant at Grand Falls wherever there were hard woods. It was a common bird at Fort Fairfield.

31. *Hirundo erythrogastra* Bodd. BARN SWALLOW.—Common.

32. *Tachycineta bicolor* (Vieill.) Caban. WHITE-BELLIED SWALLOW.—At Grand Falls it was common in suitable localities. None were seen about the town. It was abundant at Fort Fairfield.

33. *Petrochelidon lunifrons* (Say) Lawr. EAVE SWALLOW.—Common at Grand Falls. Abundant at Fort Fairfield.

34. *Cotile riparia* (Linn.) Boie. BANK SWALLOW.—Common.

35. *Progne subis* (Linn.) Bd. PURPLE MARTIN.—Common, breeding in martin-houses at Fort Fairfield. This bird seems to be generally distributed throughout eastern Maine and the adjoining parts of New Brunswick, where there are settlements. While on our way to Fort Fairfield we noticed it at a number of places between Bangor and Woodstock, N. B., as well as at various points along the St. John River between Fredericton, N. B., and Fort Fairfield. It is also common at Houlton.

36. *Ampelis cedrorum* (Vieill.) Bd. CEDARBIRD.—It was not uncommon at Grand Falls. At Fort Fairfield we found it common.



37. *Vireo olivaceus* (Linn.) Vieill. RED-EYED VIREO.—Common.
38. *Vireo philadelphicus* Cass. PHILADELPHIA VIREO.—Taken only at Grand Falls in May, singing in the hard woods.
39. *Vireo solitarius* Vieill. SOLITARY VIREO.—This species was apparently not very common at Fort Fairfield. It was not seen at Grand Falls. Mr. McLeod gives it in his notes as “quite common” at Houlton.
40. *Pyrangra rubra* (Linn.) Vieill. SCARLET Tanager.—Not rare in the hard woods at Grand Falls. The people there call them “war-birds.” We did not see them at Fort Fairfield, though we have reason to think that they occur. At Houlton Mr. McLeod says they are “rare.” They arrive May 29. I have not found the nest, but have a young one taken here. They remain all summer.”

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## Recent Literature.

DR. COUES' NEW CHECK LIST AND DICTIONARY.\*—Judging from advance sheets lately received, this new treatise by Dr. Coues will occupy a previously unclaimed place among ornithological works; for, as its title indicates, it is much more than a catalogue of North American birds. Its novel feature is a dictionary of etymology, orthography and orthoëpy of scientific names, to which is devoted the lower portion of each page of the running list. In this department the generic, specific and varietal names—duplicated from the text above with the addition of the diacritical marks for quantities, accents and division of syllables—are exhaustively treated; their derivation and meaning being explained, their construction scrutinized, their spelling revised, and their applicability in each particular case carefully considered. The erudition and scholarly research involved in this undertaking must be apparent to the most casual reader. The practical value of the work is equally plain, and perhaps it is not too much to say that it calls for a fuller measure of gratitude on the part of ornithologists than anything which its versatile author has hitherto produced.

A detailed consideration of the Check List proper must necessarily be deferred until the appearance of the complete work; pending this, we may simply say that the plan followed by Dr. Coues is essentially to make a second edition of his original list, with all the required additions and corrections to date, and such revision of nomenclature as seemed desirable

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\*The Coues Check List of North American Birds, revised to date and entirely rewritten under direction of the author, with a Dictionary of the Etymology, Orthography and Orthoëpy of the scientific names, the Concordance of previous lists, and a Catalogue of his Ornithological Publications. Boston: Estes and Lauriat. 1882. 1 vol. roy. 8vo. pp. 165.

and practicable. Ten species are subtracted, and one hundred and twenty added, while names are changed for various reasons in probably more than a hundred cases. A simple system of reference numbers forms a concordance of the present and original edition, as well as with Baird's list of 1858 and Ridgway's of 1880. The total number of species and varieties enumerated is eight hundred and eighty-eight.

It should be mentioned that the introductory portion of the work includes an analysis of the present list as compared with that of 1874, and an important chapter entitled "Remarks on the use of names." The latter is devoted to a general consideration of the technique of Greek and Latin scientific names and the principles governing their derivation, spelling and pronunciation.

The book ends with a catalogue complete to date of the author's ornithological publications. We understand that the edition will be offered to the public before the close of the present month. May it meet with the cordial reception which it so richly merits.—W. B.

NESTS AND EGGS OF OHIO BIRDS.—It is always a pleasure to record the progress of this notably meritorious work—a pleasure which we trust will be ours until the completion of the design which the authors have thus far carried out so successfully. As we have before remarked, there has been nothing since Audubon in the way of pictorial illustration of American Ornithology to compare with the present work—nothing to claim the union of an equal degree of artistic skill and scientific accuracy. We have no knowledge of the financial aspects of the case; but, as such a work is necessarily expensive, we can only trust that it continues to receive the support it so richly deserves. It is, we believe, sold only by subscription. The last number which has reached us is a double one, being parts 10 and 11, dating Oct. 1881 and Jan. 1882, containing Plates XXVIII-XXXIII, and pages 107-118. Plate 18 is perhaps the first in which the authors have introduced a bird—being the head of the Purple Martin protruding from the orifice of the C gourds so frequently put up in the South for its accommodation. This figure shows that Mrs. Jones can draw and paint a bird as well as its nest and eggs—and we should not be surprised if other birds appeared with their nests in future numbers. The temptation thus to enlarge upon the original plan of the work must be at times almost irresistible. Plate 29 is *Euspiza americana*, the simple nest of which gives less scope for the artist's skill than the elaborately finished surroundings of the Song Sparrow's nest of Plate 30. The extremes of size and coloring of the eggs of *Melospiza* are well portrayed, as are those of the Thrasher, the rough exterior of whose nest fairly bristles on Plate 31. One of the most artistic pictures of the whole series is the lowly nest of *Helminthophaga pinus* (Plate 32), with its characteristic surroundings at the foot of a slight bush clump. It is interesting to note in this case the curious "protective mimicry" by which the nest resembles a bunch of dead leaves and dried bark strips blown and caught among the roots of a bramble. One would have sharp eyes who would

at first glance see it was something else. The last plate (33) represents the nest of the Summer Tanager, furnishing a good illustration of a "saddled" nest—by which we mean one placed directly upon a large horizontal bough, only confined by a few slight upright twigs. The text consists, as usually heretofore, of a folio to each plate, and continues to be prepared by Dr. Howard E. Jones. We find it to be a perfectly reliable account of the objects represented. The authors evidently have spared no pains or expense in maintaining the high standard of excellence they set for themselves at the beginning. — E. C.

PROF. MACOUN'S REPORT OF EXPLORATION.\*—We hear so seldom from our friends of the Dominion, as far as ornithology is concerned, that the present contribution would be welcome as an index of their activity, even were it of less importance than we find it to be. It is difficult to cite the brochure correctly, as it has no title-page and bears no date or place of publication, and may be an "extra" of a portion of some more extensive government publication. However this may be, the pamphlet which reaches us through Professor Macoun's kind attentions is the report of the Surveyor General to the Minister of the Interior, consisting chiefly (pp. 8-40) of Professor Macoun's own report of his explorations during the summer of 1880 of that portion of the Souris River Valley lying within British Territory and of the adjoining region to the west and north—that is to say, north of our territories of Dakota and Montana. The region is one seldom examined even incidentally in the interests of ornithology, and the present paper possesses decided value, as the observer appeared to have paid special attention to the distribution of birds in the wide area traversed. After a résumé of the leading ornithological features of the region is presented an annotated list of the species secured, 109 in number. This list may be profitably examined in connection with the article on the birds observed along the parallel of 49° by the Northern Boundary Commission in 1873 and 1874. We feel at liberty to call attention to some manuscript alterations made by the author in our copy. For *Coturniculus passerinus* read *Zonotrichia albicollis*; for *Myiarchus crinitus*, read *Tyrannus verticalis*; for *Archibuteo lagopus*, read *A. ferrugineus*, the range of which is thus carried beyond any point hitherto given; for *Tringa canutus* read *T. bairdi*; for *Podilymbus podiceps*, read *Podiceps californicus*. We could wish the report were better printed; but poor presswork is the usual fate of public documents, English or American. — E. C.

KNOWLTON'S REVISED LIST OF THE BIRDS OF BRANDON, VERMONT.†—This is a briefly annotated list of 149 species occurring in the immediate

\* Extract from a Report of Exploration by Professor John Macoun, M. A., F. L. S. Report of Department of Interior (n. d., n. p. Ottawa, 1881? 8vo, pp. 48.)

† A Revised List of the Birds of Brandon, Vt. and vicinity. By F. H. Knowlton. The Brandon Union (newspaper), February 10, 1882. See also, by the same author:—A Partial List of the Birds of Brandon, Vt. The Brandon Union, December 13, 1878.

—Remarks on some Western Vermont Birds. Bull. Nutt. Ornith. Club, Vol. VII, January, 1882, pp. 63, 64.

vicinity of Brandon. The author says: "A few more species doubtless occur, especially among the Waders and Swimmers, but as they have never been actually noted, they have been rigidly excluded." An examination of the List shows that, with perhaps one or two exceptions, he has succeeded in adhering to this principle, the result being a very reliable list as far as it goes. The further application of this rule doubtless accounts for the fact that many of the species are not stated to breed that yet no doubt do so.

The chief interest of the List lies in its bearing upon the extent of the Alleghanian fauna in the Champlain valley. The breeding of such species as *Dendroica striata* and *Zonotrichia leucophrys*, the occurrence of *Perisoreus canadensis* and *Picoides arcticus*, and the absence of *Ortyx virginiana* and one or two other species, are almost the only exceptions to an otherwise strictly Alleghanian fauna.

A number of species, especially among the migrants, would seem, from what the writer says, to be by no means numerous at this locality, and no doubt his statements are strictly in accordance with his experience. We have reason to believe, however, that a more thorough search might reveal greater numbers of some of these species.

It is to be regretted that Mr. Knowlton's List could not have appeared elsewhere than in the columns of a newspaper, both for the sake of giving it a more permanent form, and of avoiding the typographical errors inevitable under such circumstances. It may be worth while here to mention that by a slip of the pen Mr. Knowlton has recorded Wilson's Plover (*Ochthodromus wilsonius*) instead of Wilson's Snipe.—C. F. B.

KRUKENBERG ON THE COLORING MATTER OF FEATHERS.\*—This paper, the first of a series, seems to be the product of more careful work than previous publications on the subject. The author first states positively that the color may change after growth, the feather becoming lighter or darker as the case may be, but postpones deciding whether the change is the result of external or internal causes. Judging from the effects of stimulants upon Canaries with *fully* grown feathers, I have no doubt that internal changes play an important part. At least, almost white Canaries will become very yellow, gray sometimes appearing, if properly fed.

Turacin, a red or purple-violet pigment, found in the feathers of the *Musophagidæ* is first considered. Attention was first called to this pigment by Verreaux, who found that the purple-violet in the wing feathers of *Corythaix albicristatus* was destroyed by wetting, but returned on drying. Later it was observed that the water in which these birds bathed became colored dark red. Facts worthy of consideration by all systematic ornithologists. Turacin is soluble in weak alkalies, insoluble in acids, and slightly soluble in water, especially if warm. It may be precipitated as an amorphous red powder by the action of acids. In solution the

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\* Dr. C. Fr. W. Krukenberg. Die Farbstoffe der Federn, in Dessen Vergleichend-physiologische Studien. I Reihe, V Abth., 1881, s. 72-92. Plate III.

spectrum of Turacin is marked by two absorption bands, between D and E, much resembling those of oxyhemoglobin. Carbon dioxide and oxygen, however, have no effect on the color or the spectrum. As to its chemical composition the author differs from his predecessors in that he denies the presence of nitrogen, though copper and iron are both present in considerable quantities. By the action of concentrated sulphuric acid two products are formed, named  $\alpha$  Turaceïn and  $\beta$  Turaceïn by the author.

Zoönerythrin, another red pigment of much wider distribution, is found in red feathers, as those of the Flamingo and the Cardinal Grosbeak. It is soluble in alcohol, ether, bisulphide of carbon, and the like, from which it can be precipitated by evaporation. The solution of this pigment is often favored by first digesting the feather in a trypsin or pepsin solution. Unlike Turacin, Zoönerythrin has no absorption bands, but all is absorbed beyond E.

Zoöfulvin, a yellow pigment of much the same solubility as the preceding, occurs in the yellow feathers of the European Oriole, the Canary, and the like. The spectrum has two bands between F and G which vary in position according to the solvent used.

As yet Dr. Krukenberg has been unable to extract any green, blue, or purple pigment from feathers, so that he agrees with Bogdanon that blue feathers have no pigment as proved by transmitted light. Of this any one can at once convince himself by holding the feather of a Bluebird immersed in water between himself and a window.—J. AMORY JEFFRIES.

MINOR ORNITHOLOGICAL PAPERS. — 161. *The Ruddy Duck (Erismatura rubida)*. By Spencer Trotter, *Chicago Field*, Vol. XIII, p. 23.—Brief general account, including reference to their occasional great abundance in Chesapeake Bay.

162. *Bibliographical Manuals of American Naturalists. Chapter II. Dr. Elliott Coues, U. S. A.* By William Hosea Ballou. *Ibid.*, XIII, pp. 92, 103, 123, 189, 205, 221.—Rather more than 400 titles of papers and works, relating mainly to ornithology.

163. *Nomenclature of the North American Grouse.* By Spencer Trotter. *Ibid.*, XIII, pp. 314, 315.—Common and scientific names of North American Grouse, with their principal synonymy and habitats.

163. *The California Quails in Missouri.* By H. Clay Ewing. *Ibid.* XIII, p. 413.—Six or seven pairs, turned out near the junction of the Missouri and Osage Rivers in March 1879, raised broods the following season near where they were liberated.

164. *Bibliographical Manual of American Naturalists. Chapter III. The Literature of Prof. Edward D. Cope.* By Wm. Hosea Ballou. *Ibid.* XIV, pp. 19, 20.—Contains a few ornithological titles.

165. *Can the Pinnated Grouse be successfully propagated?* By H. W. Merrill. *Forest and Stream*, XVI, Feb. 10, 1881, p. 28.—Believes they can be "successfully propagated" with proper "regard to cover, food and range."

166. *Pine Grosbeak (Pinicola enucleator, L., V.) and Robin (Turdus migratorius, L.) in Winter [in Nova Scotia].* By J. Matthews Jones.

*Ibid.*, XVI, March 13, 1881, p. 86.—The former "quite common"; small flocks of the latter frequent the spruce woods every winter, in Point Pleasant Park, Halifax peninsula.

167. *The "Crane's Back."* By J. C. Merrill. *Ibid.*, XVI, March 10, 1881, p. 105.—A Cree Indian account of the *napite-shu-utle*, a bird said to migrate by taking passage on the backs of Cranes. The bird is believed to be a Grebe.

168. *A Hawk new to the United States.* By Robert Ridgway. *Ibid.*, XVI, Apr. 14, 1881, 206.—From Oyster Bay, Fla., provisionally referred to *Buteo fuliginosus*. (See this *Bull.*, VI, Oct. 1881, p. 207.)

169. *The Pine Grosbeak.* By Chas. E. Ingalls. *Ibid.*, XVI, Apr. 14, 1881, pp. 206, 207.—Observations on its habits in winter in Massachusetts.

170. *Our unique Spoon-billed Sandpiper, Eurinorhynchus pygmaeus* (Linn.). By Tarleton H. Bean. *Ibid.*, XVI, Apr. 21, 1881, p. 225.—Brief general history of the species, with record of its capture at Plover Bay, Eastern Siberia, and Point Barrow, Alaska.

171. *Domesticated Quail.* By Henry Benbrook. *Ibid.*, XVI, May 5, 1881, p. 266.—*Ortyx virginianus* successfully reared in captivity to the third generation. Believes that under favorable circumstances they could be bred "as easily as Turkeys."

172. *Great Carolina Wren.* By William Dutcher. *Ibid.*, XVI, July 14, 1881, p. 473.—Record of its capture at Greenville, N. J., within four miles of New York City.

173. *The Rail we shoot.* [By George B Grinnell.] *Ibid.*, XVII, Sept. 22, 1881, pp. 146, 147.—Classification, diagnoses and habitats of the *Rallidæ* of the United States.

174. *Range and Rotary Movements of Limicolæ.* By W. Hapgood. *Ibid.*, XVII, Oct. 20, 1881, pp. 225-228.—An important and suggestive paper on the migrations and range of American *Limicolæ*. The greater part of the species of this group are noticed at length. The paper relates especially to the winter haunts of these birds, and the conclusion is pretty fairly sustained that many of them pass beyond the tropics to winter in the Southern Hemisphere.

175. *Migration of Shore Birds.* By M. H. Simons. *Ibid.*, XVII, Nov. 10, 1881, p. 288.—Apropos of Mr. Hapgood's paper (see No. 174). the writer calls attention to the fact that many kinds of Shore Birds winter in Florida and the other Gulf States. "Didymus," under the same caption, has some pertinent suggestions in reference to Mr. Hapgood's paper.

176. *The Herring Gull and the Ring-bill on Georgian Bay.* By Rev. J. A. Langille. *Ibid.*, XVII, Nov. 17, 1881, p. 307.—On the habits, etc., of these species at their breeding haunts in Georgian Bay.

177. *Beechnuts and Woodpeckers.* By C. Hart Merriam, M. D. *Ibid.*, XVII, Dec. 1, 1881, p. 347.—A reply to several pseudonymous articles in previous numbers of this journal (*Forest and Stream*) in reference to the Red-headed Woodpecker's habit of eating beechnuts. Other notes on the same subject, by various contributors, follow in this and succeeding numbers.

178. *The Enemies of Game Birds*. By Adolphe B. Covert [and others]. *Ibid.*, XVII, Dec. 8, 1881, p. 366, Dec. 22, p. 407, and Dec. 29, p. 428.—Various enemies are mentioned, among whom the Red Squirrel is prominent.

179. *Habits of Woodpeckers*. By W. Beeke [and others]. *Ibid.*, XVII, Dec. 15, 1881, p. 387.—In reference to their laying up stores of beechnuts for winter use, particularly refers to the Red-headed Woodpecker.

180. *Inquiries about the Snow Grouse* [lege Goose]. By William Dutcher. *Ibid.*, XVII, Dec. 22, 1881, p. 407.—In reference to the distribution of *Anser hyperboreus* on the Atlantic coast, and to the change of plumage in the Blue Goose (*A. caerulescens*) in captivity.

181. *The Sparrow Curse in Australia*. *Ibid.*, XVII, Dec. 22, 1881, pp. 407, 408.—Abstract of a "progress report" of a government commission appointed to investigate "alleged injuries caused to fruit growers, gardeners, farmers and others by [the imported] Sparrows." The analysis of the testimony taken is suggestive reading in its bearing upon the "Sparrow Pest" of our own country.

182. *The Snow Goose and Blue Goose*. By C. S. Wescott. *Ibid.*, XVII, Jan. 5, 1882, p. 447.—Respecting their specific diversity, and on the occurrence of the Snow Goose in Delaware Bay. This is followed by a communication (under the same caption) from Arthur Edward Brown, who states that seven Blue Geese have lived seven years in the Philadelphia Zoological Garden without showing any material change of color.

183. *Der Schwalbenweih* (*Nauclerus forficatus*). Von H. Nehrling. *Ornithologisches Centralblatt*, VI. No. 2, 15 Jan. 1881, pp. 9, 10.—Account of its habits, etc., as observed in Texas.

184. *Der Gelbkopfstärling oder Gelbkopfsturpiel* (*Xanthocephalus icterocephalus* Baird). Von H. Nehrling. *Ibid.*, VI, No. 11, 1 Juni, 1881, pp. 81-84, No. 13, 1 Juli, 1881, pp. 97, 98.—General history.

185. *Die Wandertaube* [*Ectopistes migratorius*]. Von Chas. L. Mann. *Ibid.*, VI, No. 21, 1 Nov. 1881, pp. 164-166. (Aus: *Jahresber. des Naturhist. Vereins in Wisconsin* 1880-81.)—On the great numbers destroyed by pigeon hunters for the market. Contains interesting statistics of the slaughter and the manner in which it is prosecuted.

186. *Zwei amerikanische Prairiefinken*. Von H. Nehrling. *Monatschrift des Deutschen Vereins zum Schutze der Vogelwelt*, VI Jahrg., No. 3, März, 1881, pp. 58-64.—General account of the "Lerchenfink (*Chondestes grammacus* Bp.)" and the "Savannenfink (*Passerculus savanna* Bp.)."

187. *Ornithologische Beobachtungen aus Texas*. II. Von H. Nehrling. *Ibid.*, VI, No. 5, Mai, 1881, pp. 111-121. (See this Bulletin, VI, p. 109.)

188. *Nordamerikanische Vögel im Freileben geschildert*. Von H. Nehrling. *Die gefiederte Welt. Zeitschrift für Vogelliebhaber, -Züchter und -Händler*, X Jahrg., 1881.—Under this title Dr. Nehrling contributes a series of well-written popular articles on various North American birds. In the present volume are the following: (1) Das Rubingoldhähnchen (*Regulus calendula* Lichtst.), l. c. pp. 14-16, 24-26. (2) Der blauköpfige

oder Brewer's Strbling, *Scolecophagus Breweri*, Nehrl. *S. cyanocephalus* Cab. . . .), pp. 44-46, 57, 58. (3) Der Kentuckysnger oder Buschsnger (*Sylvia-Opornis* [sic.]—*formosa* Wils. . . .), pp. 100-102. (4) Die Einfiedlerdrossel (*Turdus Pallasii* Cab. . . .), pp. 173, 174. (5) Der Gold- oder Kukukspecht (*Colaptes auratus* Swns. . . .), pp. 228-230, 240, 241, 251-253, 265, 266. (6) Der Scherentyrann, Scheren- oder Gabelschwanz (*Milvulus forficatus*. Swains. . . .), pp. 325, 326, 333-335. (7) Der blaugraue Fliegenfnger oder Mckenfnger (*Polioptila cerulea* Scl.), pp. 368-370, 380, 381, 393. (8) Der Satrap oder das Gelbkrongoldhhnchen (*Regulus satrapa*, Lichsts. . . .), pp. 435, 436. (9) Die Bergdrossel (*Oreoscoptes montanus* Brd. . . .), pp. 528-530.

189. *Rocky Mountains-Httensnger oder Steinschmtzer* ( . . . *Sialia arctica* Swns.) *Eine Vogelstudie aus den Felsengebirgen*. Von Fr. Trefz. *Ibid.*, p. 81.

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## General Notes.

DESCRIPTION OF A NEST OF THE WATER OUZEL.—The nest of the Water Ouzel (*Cinclus mexicanus*) is perhaps not so well known as to make the following description of one wholly uninteresting. The nest when found was in good condition, and had evidently been used the past season. It was built under a slightly overhanging wall of limestone, on a ledge projecting seven or eight inches from the wall, and about four feet above low-water mark, the deepest part of a swift mountain stream flowing directly beneath. The material of construction was a bright green moss, forming a rather conspicuous object for some distance along the opposite bank. The nest has a nearly spherical interior seven inches in diameter. The entrance is triangular, one side of the triangle forming the top and being three and one-half inches across and three inches above the lower angle. The most exposed side of the nest varies from three to four inches in thickness, the top and remainder being only an inch and a half through. At time of finding, the interior of the nest was perfectly clean, but outside, just below the opening, the rock was discolored for some distance by excrement of the birds. Side by side with this nest was an older one partially destroyed, and I fancied I could see traces of still another on the same ledge not far off. The birds had evidently lived in the locality for some time.—R. S. WILLIAMS, *Gold Run, Montana*.

THE SHORT-BILLED MARSH WREN IN NEW HAMPSHIRE.—On the 24th of August, 1881, while investigating the recesses of a fresh water marsh at Rye Beach, N. H., I found a colony of Short-billed Marsh Wrens (*Cistothorus stellaris*) in a small meadow about a mile from the sea. One bird was shot, and five or six others seen and heard.



Mr. Wm. Brewster in 1872 found this bird in the same vicinity, but in a locality about five miles farther inland.

These two records extend the northern range of the Short-billed Marsh Wren, and give it a place among the birds of New Hampshire.—HENRY M. SPELMAN, *Cambridge, Mass.*

EARLY ARRIVAL OF THE YELLOW-RUMP IN SOUTHERN MAINE.—This morning—March 21, 1882—I found a solitary Yellow-rumped Warbler (*Dendroica coronata*) flitting about in a struggling growth of spruces, on Cape Elizabeth. His arrival is unprecedentedly early for this vicinity. The Yellow-rumps usually reach Portland in the last week of April, sometimes not until after May 1, and up to to-day I have never seen one before April 21, which was the date of their appearance in 1879. My little friend of this morning was probably only an accidental and temporary visitor. Snow still lies from two to three feet deep in the woods, and much blustering, wintry weather must be expected, before the earliest Warblers come to us in earnest.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

LATE STAY (PROBABLE WINTERING) OF DENDROICA PINUS IN MASSACHUSETTS.—A few individuals of the Pine-creeping Warbler remained so late with us the last season, that their courage deserves a record. I found four of them on December 5, 1881, in company with Chickadees, in a rocky run thickly set with maples and alders. There were no pines, but a small bunch of them not far away. I shot one, according to rule, to make sure of the species. Being desirous of ascertaining if they proposed to spend the winter in that cheerful company, on January 1, 1882, I sent a young friend, who is well posted and a good observer, to the locality, and he reported seeing two of the Warblers so near at hand, perhaps twenty feet, as to make the identification positive. I intended to look for them again in February, but was unable to do so.—F. C. BROWNE, *Framingham, Mass.*

THE HOODED WARBLER IN WESTERN NEW YORK.—From various points in the dense forest, on the balmy days of May, comes the common and familiar song of the Hooded Warbler,—*che-reek, che-reek, che-reek, chi-di-eh*, the first three notes with a loud bell-like ring, and the rest in very much accelerated time, and with the falling inflection. Arriving early in May, this is one of our common summer residents throughout the dense upland forests, occupying the lower story of the woodland home, while the Cœrulean Warbler occupies the upper. Here let me say that in addition to its alarm note, a sharp whistling or metallic *chip* which is very clearly characterized, the Hooded Warbler has two distinct songs, as different as if coming from different species. Never shall I forget how I was once puzzled by this trick. I was strolling in a thick forest, near the corner of a slashing, in an evening twilight in June, when I was surprised by a strange whistling melody,—*whew-reek, whew-ree-ek*—with

a marked emphasis on the second syllable, and a still more marked one on the last. Part of the time this utterance was somewhat varied, a few notes being sometimes added, and again a few being dropped. My curiosity was greatly excited, for I had supposed myself familiar with the voices of all the birds in the neighborhood; but it became too dark to identify the bird. For nearly a week I went to that spot every day, always hearing the song, but never being able to get a clear sight of the bird. It seemed exceedingly shy. In vain did I crawl on hands and knees among the undergrowth to get near to it; for just as I would seem about to gain a good view of it the song would cease at the point under observation and come from one more distant. Just as I was about to give the matter up one evening, down came the singer, stage by stage through the thick foliage, and alighting within a few feet of me and in clear sight, gave the full effect of his whistling song. I have since heard the same song a number of times and in different places from the Hooded Warbler. So I conclude that in the case of this species there are, occasionally at least, two distinct and altogether different songs.

The Hooded Warbler is one of those which make their home on or near the ground. Here it keeps itself for the most part well concealed among the foliage of the thick undergrowth, having a rather slow and dignified movement for a bird of its kind.

It builds its nest from a foot to eighteen inches from the ground, generally in the upright or somewhat leaning fork of a little bush. I once found it on a beech limb, lying on the ground, but still retaining the dry leaves. It is somewhat bulky, but quite neat, the lower part being of dry or skeleton leaves, the upper part, especially the high and well-defined rim, of long fibrous bark, as that of the grape-vine, ash, basswood, or elm, laid almost as nicely as coiled cords, the whole structure being bound together by a webby material, and lined with fine grasses, bark-fibres, and horse-hair. In location, material, and structure, it is quite unique, and, like most other birds' nests, is a much more certain means of identification than the eggs themselves. These, two to four in number, varying from .63X.52 to .75X.50, are clear white, delicately specked and spotted, sometimes even blotched, with reddish, brown, and lilac. In form and coloration the eggs are very variable. They may be found fresh from the last week in May till the middle of June. A second set may be found in July. The male aids in incubation.

Confined to the eastern part of the United States, and barely entering the southern part of New England, Western New York, and Central New York where it is quite common, must be about the northern limit of this species.—J. H. LANGILLE, *Knowlesville, Orleans Co., N. Y.*

BREEDING OF THE PINE GROSBEEK (*Pinicola enucleator*) IN LOWER CANADA.—Last summer I had the rare good fortune to accompany, as his guest, the Hon. Judge H. E. Taschereau (Chief Justice Supreme Court of Canada) on his annual salmon fishing excursion to the Godbout River, which empties into the St. Lawrence from the north, about six miles from the Pointe des Monts where the river widens into the Gulf.

One rainy afternoon about the middle of July, while the Judge was catching salmon at the famous "Upper Pool" on the Godbout, Mr. Nap. A. Comeau and I climbed a high and densely wooded hill that rises from the western border of the pool, and when near the summit saw a Pine Grosbeak, in the slate and golden plumage, hopping about amongst the branches of a large Balsam (*Abies balsamea*). I was within twenty feet from the bird, but having only a rifle was unable to secure it. Mr. Comeau, who lives at the mouth of the Godbout, told me that this species was by no means rare here, and that he regarded it as a resident. He has since written me that he shot several after I left, and that "the bird is quite common here both summer and winter." Although he has never taken its nest, he says "I have no doubt they breed here, and I have often seen them in the early part of the fall while out trapping. They seem to be fond of keeping near streams and lakes."

Dr. Coues found the Pine Bullfinch breeding on the Labrador Coast, and I have no doubt that it breeds all along the north shore of the Gulf of St. Lawrence, and perhaps extends even as far west as the Saguenay, along the north shore of the St. Lawrence River. It is asserted, on high authority, that it breeds in some parts of Northern New England.—C. Hart Merriam, M.D., Locust Grove, N. Y.

COTURNICULUS LECONTEI; C. HENSLOWI, AND CISTOTHORUS STELLARIS IN FLORIDA.—Mr. C. J. Maynard has kindly placed at my disposal the following notes made during his recent trip to Florida. In November, 1881, he spent three weeks collecting at Rosewood, a small settlement on the northern edge of the Gulf Hummock, about eighteen miles northeast of Cedar Keys. Around the outskirts of this town were a number of old fields, grown up to rank grass and tall weeds, but nevertheless perfectly dry. Here he found Leconte's Buntings, Henslow's Buntings, Yellow-winged Sparrows, and Short-billed Marsh Wrens, associating together in comparative numbers ranking in the order in which their names are mentioned. The first *C. lecontei* was shot November 4. Shortly afterwards they became so abundant that as many as twenty were sometimes seen in a day, but notwithstanding their numbers, it was by no means easy to obtain specimens. The chief difficulty arose from their excessive tameness, for they could rarely be forced to take wing, while in the long grass it was impossible to see them at a greater distance than a few yards. Indeed so very fearless were they that on several occasions Mr. Maynard nearly caught them in his insect net. All four species were apparently established for the winter.

The detection of Leconte's Bunting at Coosada, Alabama, by Mr. Brown,\* and more recently in Chester County, South Carolina, by Mr. Loomis,† has prepared us to expect it almost anywhere in the Southern States, but I believe that this is its first Florida record. The occurrence

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\* See this Bulletin, Vol. IV, p. 8.

† See this Bulletin, Vol. VII, pp. 54-55.

of Henslow's Bunting is also of importance, as confirming Audubon's more or less discredited statement that it wintered numerously in Florida; while that of the Short-billed Marsh Wren is interesting from the exceptional character of the locality and the distinguished society in which the little bird was found.—WILLIAM BREWSTER, *Cambridge, Mass.*

AMMODRAMUS CAUDACUTUS.—A SOMEWHAT INLAND RECORD ON THE ATLANTIC COAST.—On June 21, 1881, in company with my friends Messrs. Chamberlain and Daniel, of St. John. N. B., I found a few pairs of Sharp-tailed Finches in the tall grassy marshes bordering the Kennebecasis River at Hampton, which is about twenty miles to the north of the above named city and the Bay of Fundy, and about at the head of tide water. The birds were singing, and undoubtedly breeding, but a severe hunt for their nests was unsuccessful. Although a closely allied variety (*nelsoni*) is known to occur in certain western States. I think our maritime form has not before been observed away from the immediate coast on the Atlantic seaboard. It might however be looked for up our rivers and creeks as far as or a little above the flow of tide water. See this Bulletin, II, pp. 27, 28; III, pp. 48, 98; V, p. 52.—H. A. PURDIE, *Newton, Mass.*

THE WHITE-THROATED SPARROW IN WINTER NEAR WORCESTER, MASS.—I saw White-throated Sparrows (*Zonotrichia albicollis*) at different dates during December, 1879. I also saw some on January 1, 1880. I, myself, had not observed it before, though possibly it may not be uncommon.—J. A. FARLEY, *Worcester, Mass.*

PEUCEA RUFICEPS EREMÆCA.—In Gillespie County, Texas, which adjoins Kendall Co. on the north, where Mr. Nathan C. Brown's specimens were taken, I collected on April 24, 1878, a pair of Sparrows which Mr. J. A. Allen identified as *Peucea ruficeps*. From the fact that Mr. Brown collected no typical *ruficeps* it is more than likely that my specimens were var. *eremæca*.

My specimens were sent to the late Greene Smith, Esq., Peterboro, New York, and are Nos. 961 and 962 in his Museum.—G. H. RAGSDALE, *Gainesville, Texas.*

THE CANADA JAY AT PORTLAND, MAINE.—A specimen of the Canada Jay (*Perisoreus canadensis*) was killed in Scarborough on October 15, 1880, by Mr. Luther Rellon, of Portland, and delivered into my hands a few hours after its capture. The specimen is worth noting from its being the first that I have ever known to occur in the vicinity of Portland, although its kind is said by Professor Verrill (Proc. Ess. Inst., Vol. III, p. 151) to winter commonly at Norway, Maine, only forty miles farther north.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

THE WHITE-THROATED SWIFT BREEDING ON BELT RIVER, MONTANA.—About the middle of last July, while hunting on Belt River, I happened to approach the edge of the high limestone cliffs which rise above the

stream for several miles after leaving the mountains. Watching the Violet-green and Crescent Swallows, which were abundant, for some time, I was about to leave, when I noticed a Swift evidently flying directly towards me. It passed only a few yards overhead, displaying at the same time the extensive white throat-patch of *Cypselus saxatilis*. Further search revealed some half a dozen altogether. A small opening in the rock which a bird of this species was seen to enter and reappear from several times, I approached, near enough to hear a vigorous twittering at each visit of the parent bird, from which I presume the young were well advanced. This is the only species of Swift I have yet seen in the Territory.—R. S. WILLIAMS, *Gold Run, M. T.*

CAPTURE OF THE GOLDEN EAGLE (*Aquila chrysaetus canadensis*) NEAR COLUMBUS, O.—December 13, 1881, I received a male specimen of the Golden Eagle, killed five miles west of the city.

This bird, according to information which I have gathered from various sources, had caused the farmers in the neighborhood in which it was killed a great amount of annoyance. A reward was offered, and published in our city papers, for the capture of a "Bald Eagle" (as they called it), which had killed several young calves. By further inquiry I ascertained that the bird was seen eating at two of the calves, but was not seen in the act of killing them.—OLIVER DAVIE, *Columbus, O.*

THE LITTLE BLUE HERON IN MAINE.—During the summer of 1881 a small white Heron took up his abode in a dense swamp bordering the eastern side of Scarborough Marsh. He foraged regularly about the neighboring ponds and rivers, and before autumn had been seen and unsuccessfully shot at by many covetous gunners. In September, however, he fell captive to the wiles of Mr. Winslow Pillsbury, and now reposes in the cabinet of Mr. Chas. H. Chandler, of Cambridge, Mass. Before writing Mr. Chandler, to ascertain the species represented by his specimen, I learned that Mr. Henry A. Purdie\* had seen the bird and pronounced it the Little Blue Heron (*Florida cærulea*). No previous instance of its occurrence in Maine is on record.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

BAIRD'S SANDPIPER ON LONG ISLAND, N. Y.—A CORRECTION.—In the Bulletin for January, 1882, p. 60, it is stated that the record of a specimen of this species from Long Island is apparently its first from any point south of New England. A note to the editors from Dr. E. A. Mearns calls attention to a previous record of the species for Long Island in an article by Newbold T. Lawrence, entitled "Notes on Several Rare Birds Taken on Long Island, N. Y.," published in "Forest and Stream," Vol. X, No. 13, p. 235, May 2, 1878, as follows:—

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\* It should be stated that Mr. Purdie, with characteristic courtesy, declines to publish this note as, after discovering his prior knowledge of the specimen, I requested him to do.

"*Tringa bairdii*, Baird's Sandpiper.—Four specimens taken at Rockaway. The first two in September, 1872, shot on a small piece of meadow, out of a flock of *Tringa minutilla*. The third was taken August 26, 1873, while snipe shooting on a low strip of sand that separates the ocean and bay. My attention was first called to it by hearing a peculiar long-drawn whistle, and soon after I perceived a small snipe flying very high. The next moment it darted down and settled among my decoys, where I secured it. The fourth was taken in the same locality as the first two, September 20, 1874. Three of the above specimens were males."—EDD.

PELIDNA SUBARQUATA ON THE MAINE COAST.—I have to thank Mr. C. H. Chandler of Cambridge, for allowing me to view a mounted specimen of the Curlew Sandpiper, which he shot on the beach at Pine Point, Scarborough, Cumberland Co., on September 15, 1881. The plumage is immature—probably a bird of the year. It was in company with Peeps, but its larger size and lighter coloration were noticed, hence this visit to American shores is registered. The species is new to the Maine fauna, at least this is the first instance of actual capture within the limits of that State.\*—H. A. PURDIE, *Newton, Mass.*

THE KING RAIL IN NEW ENGLAND.—It seems that in making up the New England record of the King Rail (*Rallus elegans*)† I overlooked a note on this species, published in "Forest and Stream" of March 11, 1880. In this note Mr. Jno. H. Sage announces the capture of a female specimen at Portland, Conn., September 17, 1879.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

PURPLE GALLINULE (*Ionornis martinica*) IN RHODE ISLAND.—Mr. Newton Dexter states that some years ago Mr. P. W. Aldrich showed him a fine Purple Gallinule just received in the flesh from Westerly, R. I. Mr. Dexter bought, and now has the bird. He is not able to give the exact year, but thinks it was in 1857.—FRED. T. JENCKS, *Providence, R. I.*

NOTE ON THE HABITS OF THE YOUNG OF GALLINULA GALEATA AND PODILYMBUS PODICEPS.—Mr. N. R. Wood, who collected quite a number of young Grebes and Gallinules this summer at Montezuma Marsh, near Clyde, N. Y., tells me that the little Gallinules use the thumb to aid them in moving about. The thumb in the young of this bird is quite long and sharp, and the nestlings, when unable to walk, hook it into any yielding substance, and drag themselves along. The young Grebes are more vigorous than the Gallinules, and progress by little hops.—FREDERIC A. LUCAS, *Rochester, N. Y.*

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\* See Brewer, Proc. Bost. Soc. Nat. Hist. XVII, 1875, p. 446.

† This Bulletin, Vol. VII, p. 40.

**RHYNCHOPS NIGRA.**—AN EARLY RECORD FOR THE MASSACHUSETTS COAST.—Champlain,\* while cruising along the sandy shores of Cape Cod on a voyage of exploration in July, 1605, makes mention of the Black Skimmer, as his narration, p. 87, shows.

"We saw also a sea-bird with a black beak, the upper part slightly aquiline, four inches long and in the form of a lancet; namely, the lower part representing the handle and the upper the blade, which is thin, sharp on both sides, and shorter by a third than the other; which circumstance is a matter of astonishment to many persons, who cannot comprehend how it is possible for this bird to eat with such a beak. It is of the size of a pigeon, the wings being very long in proportion to the body, the tail short, as also the legs, which are red; the feet being small and flat. The plumage on the upper part is gray-brown, and on the under part pure white. They go always in flocks along the seashore, like the pigeons with us."

That this species was found on our shores early in this century is proved by the older natives of the Cape telling me, since the bird's recent occurrence, that "them cutwater or shearwater birds used to be with us summer times." Also Mr. Brewster informs me that Nantucket fishermen assert that Skimmers bred on Muskeget Island fifty years ago.—H. A. PURDIE, *Newton, Mass.*

**NOTES ON THE HABITS OF THE KITTIWAKE GULL.**—Some fishermen whom I lately employed to get a few Kittiwake Gulls on the winter fishing grounds off Swampscott, Massachusetts, gave me the following interesting account of the habits of this species, and the way in which my specimens were procured.

A number of small schooners sail from Swampscott every winter morning, and reach the fishing banks, which are some twelve miles off shore, about daybreak. The men then take to their dories, and buckets of bait—generally cod-livers or other refuse—are thrown out to attract the fish to the spot. Of this custom the Kittiwakes—or "Pinny Owls," as these men invariably call them—are well aware, and swarms of them quickly collect around the boats to pick up the morsels before they sink. They are very tame, and if one of the flock is shot the others hover over it as Terns will do on similar occasions. The usual way of taking them, however, is with hook and line, the bait being allowed to float off on the surface, when it is quickly seized by one of the greedy horde. In this manner great numbers are annually taken by the fishermen, who either skin and stew them or use the flesh for bait. I was assured that a "Pinny Owl" stew is by no means an unpalatable dish.

After the morning fishing is at an end the vessels start for their anchorage in Swampscott harbor, and the fish are dressed on the way. This gives the Gulls another chance which is not neglected, for the entire flock

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\* Voyages of Samuel de Champlain, translated from the French by Charles Pomeroy Otis, Ph.D., with historical illustrations, and a Memoir, by Rev. Edmund F. Slafter, A. M. Vol. II, 1604-1610, Boston, published by Prince Society, 1878.

follows closely in their wake. When the catch has been a large one, and the work of cleaning the fish is continued at the anchorage, they remain about the spot for hours picking up this offal directly under the sides of the vessels. Here again the poor birds are often mercilessly slaughtered by city gunners who shoot them for sport or practice, leaving the dead and wounded to float out to sea with the ebbing tide. The fishermen admit that their numbers have greatly diminished of late years, but they are said to be still very abundant through the winter months.—WILLIAM BREWSTER, *Cambridge, Mass.*

STERNA FORSTERI BREEDING OFF THE EASTERN SHORE OF VIRGINIA.—An impression seems to prevail among ornithologists that Forster's Tern breeds only in the interior of North America. At least I cannot learn that Dr. Coues' comparatively recent ruling\* to that effect has been publicly corrected, or that it is generally known that the bird nests on the Atlantic Coast.† On this account it may be worth while to state that during a visit to Cobb's Island, Va., in July, 1880, I found Forster's Terns breeding in moderate numbers on all the neighboring islands. They nested apart from the other Terns, but often in company with Laughing Gulls, on the salt marshes or on marshy islets, where their eggs were almost invariably laid on tide-rows of drift-weed that fringed the muddy shores. The largest colony seen in any one place comprised perhaps twenty-five pairs, but it was more usual to find from six to a dozen mingled with a countless number of Gulls. I was late for the eggs, but secured a few far advanced in incubation, besides several downy young and many adult birds in full nuptial dress.—WILLIAM BREWSTER, *Cambridge, Mass.*

NOTE ON THE FOOT OF ACCIPITER FUSCUS.—On the plantar surfaces of each foot of the Sharp-shinned Hawk two papillae may be noticed, which differ from the others, more properly described as pads, in their greater length and more symmetrical form. These pads are placed at the second phalangeal joint of the third toe, and at the third phalangeal joint of the fourth toe, that is, at the bases of the penultimate phalanges of the third and fourth toes. These papillae are shown to be modified pads, the same as those at the other two joints, by the less developed papillae of *Circus*, *Astur*, and others. This transition can readily be traced in the sketches of the feet given in the systematic works on Hawks, though the special prominence of the papillae in the Sharp-shinned Hawk does not seem to be particularly noted. On removing the skin, however, a marked difference at once comes in view. While all the pads are nearly obliterated, the papillae still remain as solid cones of connective tissue (?), having much the same shape and sizes as the entire papillae. These cones

\* Birds of the Northwest, 1874, pp. 679, 680.

† Mr. Sennett and Dr. Merrill found it breeding on the Lower Rio Grande in Texas. (Sennett, B. Rio Grande, 1878, pp. 65, 66; Merrill, Ornith. Southern Texas, 1878, p. 172.)



or cores are internally connected with the superficial fascia of the toes and seem to straddle the flexor tendons running below.

On noting the structural difference, the cause or function of these papillae at once becomes a point of interest. Why have these two pads been modified into long papillae (.12 inch in a dried specimen), and provided with a solid core? Now the foot of *Accipiter* is so constructed that the first toe opposes the second toe, and their claws move in nearly parallel arcs. This is not the case with the third and fourth toes, which are longer and not opposable to one another. Thus the claws can be opposed to nothing except the middle portions of the toes to which they belong. But when the claw is thus flexed a small space well adapted for grasping twigs and feathers is formed by the papillae, the penultimate phalanx and the claw, the point projecting beyond resembling the feet of certain crustacea and lice. Hence the function of the papillae would seem to be to aid the third and fourth claws in grasping small objects, and it is an interesting point to notice that the foot of *Accipiter fuscus* is thus drawn in North American Birds, by Baird, Brewer and Ridgway.

How far the same considerations hold in other species I cannot say, but as mentioned above, allied forms seem to possess the character to a less degree. — J. AMORY JEFFRIES, *Boston, Mass.*

SUPPLEMENTARY NOTES ON TWO TEXAS BIRDS. — In a recent paper\* on a collection of birds made in southwestern Texas, I referred a series of *Hylocichla unalascae* to the restricted form, with the remark that several specimens closely approached var. *auduboni*. Upon reading the article, an esteemed correspondent wrote me that one of these aberrant examples, which had passed into his hands, appeared to him to be true *auduboni*. In this opinion, after a re-examination of the specimen, I concur. The bird in question has a wing of 3.82 inches, which, though decidedly under the average of *auduboni*, is more than should be allowed *unalascae* proper.† Here, then, is another species, besides those previously cited, which is represented by two distinct varieties in the tract of country explored.

The single specimen of *Coturniculus passerinus* taken in the same locality represents the western variety *perpallidus*, under which, by an oversight, it was not included. — NATHAN CLIFFORD BROWN, *Portland, Me.*

\* This Bulletin, Vol. VII, p. 33.

† For an excellent review of the races of *H. unalascae*, by Mr. H. W. Henshaw, see this Bulletin, Vol. IV, p. 134. Several errors, perhaps typographical, are apparent in the tables of measurements given in this paper. For example, the bill of var. *pallasi* is said to average .53 inch, whereas the largest specimen of that form is afterwards credited with a bill of only .51. Again, var. *nanus* (i. e., *unalascae*) does not appear from the table of extreme measurements to have been found with a smaller bill than .49, though it had previously been said to average .48. The difference in length of bill exhibited by the three races of this species is almost microscopic. A much more tangible character, not mentioned by Mr. Henshaw, lies in the disproportionate slenderness of the bill of the western varieties. In a rather large (wing 3.67) example of *unalascae* before me, the bill measured across the base of the culmen is but .20 wide, while in a specimen of var. *pallasi* of the same size it is .25 wide.

ADDENDA TO THE PRELIMINARY LIST OF BIRDS ASCERTAINED TO OCCUR IN THE ADIRONDACK REGION, NORTHEASTERN NEW YORK.\*—

178. *Dendroeca striata* (Forst.) Baird. BLACK-POLL WARBLER.—In the collection of the late A. Jenings Dayan (of Lyons Falls, N. Y.) is a female of this species that he killed in the town of Lyonsdale in Lewis Co., May 23, 1877.

179. *Dendroeca pinus* (Wilson) Baird. PINE-CREEPING WARBLER.—Mr. Dayan took a full-plumaged male *D. pinus* at Lyonsdale, Lewis Co., May 8, 1877. I have never observed the species within the limits of the Adirondack Region, and it must be regarded as a rare bird here.

180. *Asio accipitrinus* (Pallas) Newton. SHORT-EARED OWL.—I have seen two specimens of the Short-eared Owl that were taken within the limits of the Adirondack Region, in Lewis County. They were both killed east of the Black River Valley—one in the town of Greig, and the other in Lyonsdale.

181. *Nyctiardea grisea nævia* (Bodd.) Allen. NIGHT HERON.—I have seen a Night Heron that was shot at Crown Point (in Essex Co.) on Lake Champlain. There were two of them together, and both were killed.

182. *Calidris arenaria* (Linn.) Illig. SANDERLING.—On the 5th of October, 1881 Mr. O. B. Lockhart killed, from a flock, four Sanderlings at Lake George, in Warren Co. (Dr. A. K. Fisher.)

183. *Chen hyperboreus* (Pallas) Boie. SNOW GOOSE.—Dr. A. K. Fisher writes me that he saw a flock of one hundred and fifty or two hundred Snow Geese on Lake George (in Warren County) Nov. 19, 1881. In company with Mr. O. B. Lockhart he rowed out to within a hundred yards of them, when they were frightened by another boat and took flight, showing plainly the black tips of their primaries as they left.

184. *Phalacrocorax dilophus* (Sw. and Rich.) Nuttall. DOUBLE-CRESTED CORMORANT.—Mr. F. H. Knowlton, from Brandon, Vermont, writes me: "I shot, on September 24, 1879, at St. Regis' Lake [Franklin County], two miles from Paul Smith's, a young female example of *Graculus dilophus*. The bird was not wild and was easily shot from the shore."

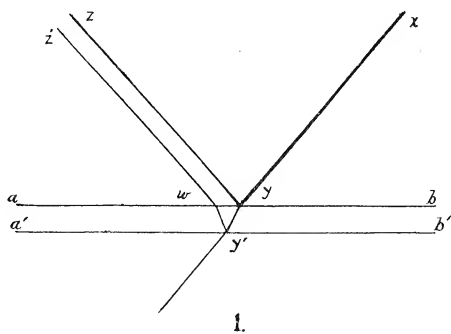
185. *Dytes auritus* (Linn.) Ridgway. HORNED GREBE.—On Little Tupper's Lake (Hamilton Co.), Oct. 22, 1881, Dr. A. K. Fisher and I saw about eight Horned Grebes and I killed one of them. While crossing Raquette Lake, the same day, Dr. Fisher shot another. At Big Moose Lake (in Hamilton and Herkimer Counties) we saw this species every day from Oct. 26 to Nov. 8, 1881. Nov. 5 I shot one out of a flock of nine. They were all in the plain fall dress, so that the size alone enabled us to distinguish young from old. In all the iris was of a bright orange red. They are excellent divers and can remain under water an astonishingly long period.—C. HART MERRIAM, M.D., *Locust Grove, N. Y.*

#### ERRATA.

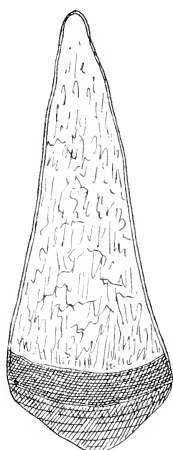
In Vol. VII, page 26, line 6, for "An indistinct, dusky" read "A black." Same page, foot note, for "οὐκέω" read "οἰκέω."

\* Bull. Nutt. Ornith. Club, Vol. VI, pp. 225-235.

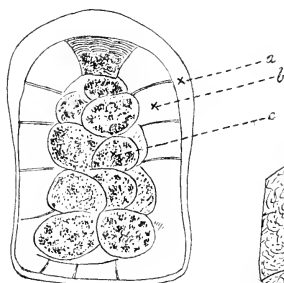




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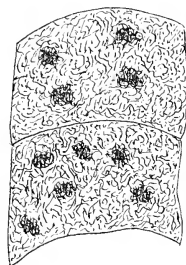
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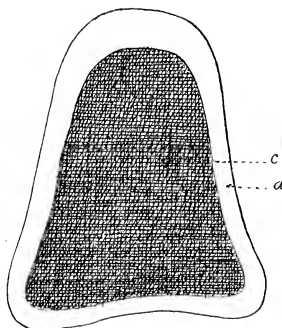
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# BULLETIN

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### THE COLORS OF FEATHERS.

BY J. AMORY JEFFRIES.

Feathers have been studied from the earliest days of the microscope, indeed long before the modern microscope came into existence. Malpighi, Hooke and Leeuwenhoek all wrote on the subject, and not a little of our knowledge dates from their time. Since then authors have constantly written on feathers and their colors, until the papers on the subject may be counted by hundreds. Accordingly little that is new can be expected from this short article, nor even a history of the literature of the subject. My only object is to give an idea, so far as is known, how the colors of feathers are produced, the literature of the subject being out of the track of most American ornithologists.

Color may be the result of any one or more of the following causes: a pigment, interference and diffraction of light in their various phases, fluorescence, and phosphorescence. Of these causes only three have been called upon to explain the colors of feathers, the last two apparently playing no part. The fluorescence noted by Dr. Krukenberg in solutions of certain feather-pigments probably plays no part, or at most an insignificant one, in the colors of feathers. Pigments act by absorbing all rays of light but those which enter into their color, that is turn them into heat.

Interference acts in several different ways, all of which are based on the same principle, and so films may be taken as an example. If a beam of light.  $xy$  (figure 1), is allowed to fall on any thin plate, or film, part of the rays will be reflected in the direction  $yz$ , the angles  $byx$  and  $ayz$  being equal. The rest of the rays will pass through the film to the other surface, being slightly refracted in their course. Here part will be reflected, and being again refracted at the first surface, will emerge in a line  $wz'$  nearly coincident with  $yz$ , the balance passing out into the air. Now the waves composing the white light of two beams  $yz$  and  $wz'$  will run together and partially obliterate each other, after the manner of ripples on water. Accordingly certain waves will be obliterated, and since white light is due to the blending of waves of the different colors, the light reflected from the film will be that of the colors not interfered with, the waves thus obliterated depending upon their length and the thickness of the film traversed. So as we look at the film from different points the conditions vary, and with them the resultant color.

Interference may also produce colored light by means of fine particles diffused through another substance, as milk in water, the particles in the air, and the like. Colored light produced in this way is known as opalescent, the transmitted light tending to the red end of the spectrum, and the reflected to the other portions. This result can be obtained by mixing black and white grains, an experiment which all have tried as school boys, by soaking chalk in ink, the result being a bluish color.

Diffraction acts apparently by bending the light rays different amounts, and thus spreading out the spectrum. Explanations of the various phenomena of this sort are difficult, and need not be entered into here.

Feathers are classed, according to their appearance, into ordinary, metallic and iridescent, the peculiarities of which are well known and so need not delay us.

The ordinary feathers are colored by simple pigments, by contrast of light and darkness and mechanically, as in the case of the Bluebird (*Sialia sialis*). Pigments of various colors are known to occur in feathers, and have received special names, as turacin, zoönerythrin, zoöfulvin, zoöxanthin, zoöchlorin, zoömelanin. These evenly distributed, as turacin, zoönerythrin, and zoöfulvin, or in patches, as zoömelanin, impart their respective colors to the

feather parts in which they exist.\* The color of the mass of the feather may, however, owing to various colors in the small feather parts, be different from that of any part.

Of these pigments none seem to be peculiar except turacin. This pigment is altered by wetting the feathers, and comes from the feathers into the water in which the birds bathe, a fact of considerable interest, since the birds maintain their normal color, thus necessitating a new supply of pigment.

White feathers are the result of the light being reflected as a whole from the finely divided feather-parts. Some grays are the result of small black nodes in the barbules, which nodes are of considerable size, and do not disperse the light, being distributed along the barbules. Other grays are the result of a small quantity of black pigment.

Yellow feathers colored with zoöfulvin receive their hue from this pigment, which is pretty evenly distributed through the texture like a dye.

Red feathers, as those of the Flamingo, Cardinal Bird, and the like, are so colored by a red pigment similar to the yellow one. Brown feathers are colored by a brown pigment in the feathers, which is for the most part collected in patches within the cells of the feather.

Violet pigments are said by some to exist, while others have never been able to extract them, so the causes of this color still remain in doubt.

Green feathers owe their color to various causes. In some it is due to a green pigment, as Turacoverdin or zoöchlorin, in others it is said to be due to a mixture of yellow and blue dots. The olive-greens are sometimes produced by a yellow pigment overlying a dark brown or black.

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\* Descriptions of the various pigments may be found in :

Krukenberg, Dr. C. Fr. W.; *Vergl.-phys. Studien*, 1 R, v. Abth. 1881, SS. 72-99, u. 2 R, 1 Abth., 1882, SS. 151-171.

Bogdanow, A., *Note sur le pigment des touracos*, *Compt. rend.*, T. LIV, 1862, pp. 660-663. *Études sur les causes de la coloration des Oiseaux*. *Compt. rend* T. XLVI, 1858, pp. 780, 781.

Church, H. H., *Researches on Turacine, an animal pigment containing copper*. *Chemical News*, vol. XIX, 1869, No. 496.

Blasius, W., A. D. *Sitzungsb. des Vereins f. Naturwiss. zur Braunschweig. Braunschweigische Anzeigen*, 1877, Nr. 29.

All the above pigments seem to be blended and used in gaudily colored birds much after the manner of paints by artists. So that a great variety of colors may be produced from a few pigments by the skilful hand of nature.

Metallic feathers, properly speaking, are those which partake of the characters shown by the red crests of the Woodpeckers. The metallic appearance is limited to the barbs, the barbules not showing this peculiarity, and being quickly shed. If a feather from the crest of a Woodpecker, say *Picus pubescens*, be examined, it will at once be noticed that the red barbs have few if any barbules, and that the barbs themselves are enlarged. Such barbules as are present, are not red but black, and only serve to diminish the effects of the red parts. They would seem accordingly to be properly classed among useless hereditary organs. That the red color is due to a pigment is proved by dissolving it out and by its persistence when examined by transmitted light. But what causes the brilliancy which has led to their being called metallic? This is due to the extreme smoothness of the barbs, the horn-cells of which they are composed being fused together and solid. Thus the unabsorbed rays of the beam of light which strikes them are reflected as a whole, instead of being sent in every direction by the walls of the cells as in most cases. The metallic feathers differ from ordinary feathers in the same way that window or glass paintings differ from ordinary pictures. They simply give off much more light, and thus produce more marked effects on our eyes.

The colors of metallic feathers seem to be limited to the red end of the spectrum, the colors varying from yellow or orange to red; blue, green or purple feathers constructed on this principle do not seem to abound.

So far we have only had to deal with pigments, and all has been plain sailing, but the various accidental colors shown by feathers are far more difficult of explanation. Not only are the parts extremely small, but the entire subject of accidental colors as regards organic structures has been in large part dealt with from a theoretical point of view. The question has not been how is the feather part made, but what kinds of structures will produce such color effects. Accordingly divers opinions have been expressed on the subject, the most probable of these we shall now endeavor to sketch out.



Blue colors seem to be accidental, that is, the result of other causes than pigments. Not only have all efforts to extract the pigments failed, but blue feathers appear gray when examined by transmitted light. Again, no blue can be found in transverse sections of blue feather parts. This method of studying the colors of feathers is worthy of more extended use than it has yet had. By this means all physical effects of the outer coat are avoided, and the exact position of the pigments can be seen. Sections are quickly prepared by fastening the feather on to a piece of pith with collodion, and mounting sections pith and all. The pith keeps the sections on end, a result otherwise difficult to obtain.

Gray-blues, such as those seen in *Dendroica caerulescens*, are due to opalescence. The feather is full of fine granules of black or darkish pigment, which in a manner already described produces a blue color.

Brilliant blues, as those shown by *Sialia sialis*, *Cyanospiza cyanea*, *Cæreba lucida*, and the like, do not seem to be susceptible of a like explanation. The color is too intense and pure to be produced in such a small space by opalescence. So most authors have simply ascribed it to some other form of interference, as a thin outer plate, which would seem on examination to be the true cause. Figure 2, drawn from a section of a Bluebird's barb enlarged about one thousand diameters, will give an idea of the structure found in such cases. The central cells are full of some dark pigment, probably zoömelanin, while the surface is bounded by a transparent layer of horn varying from  $\frac{1}{30000}$  to  $\frac{1}{10000}$  of an inch in thickness. Thus we have a contrivance not ill adapted to the production of interference colors, the black pigment absorbing all rays which are not reflected by the horn coat on the outside. Yet there are decided difficulties in this view. Thin as it is, the outer horn coat is thick compared to the length of light waves, and again the blue color is constant. However, in spite of these objections, the color must be ascribed to the action of the outer coat of cells. The structure of other bright blue feathers is much the same, though differences in minutiae exist. Thus the outer layer of cells, the external walls of which form the outer coat of the barb, are devoid of pigment in the Blue Jay. (Fig. 3.)

Here it is of interest to note that the barbs of the brown female Indigo-bird differ but slightly from the bright blue barbs of the male. In the female the pigment is more diffuse, and the outer horny coat is thicker and less dense and lustrous.

The above feathers with their smooth outer coat are connected with true iridescent feathers by an intermediate group. I refer to the highly-colored blue and green feathers of such birds as *Chlorophanes atrocristatus* (Fig. 2) and *Careba lucida*. In these the ends of the barbs are enlarged and the barbules reduced to a minimum, after the manner of the Woodpeckers; unlike them, however, the surface is rough, each cell being rounded out. When examined under a microscope such barbs appear as if covered with a mosaic of gems. Sections show, whatever may be the shape of the barb, that the walls of the iridescent parts are extremely thin, so thin that exact measurements cannot be made with the instruments at my disposal. The thickness got when reduced to fractions of an inch, is approximately  $\frac{1}{1000000}$  of an inch, a film sufficiently thin for all purposes of interference. Many of these feathers when magnified show that the color is not uniform, but that all the colors contribute their quota to the final color. The figure of a section of a barb of *Chlorophanes atrocristatus* will give some idea of such a feather. In this case the final color seems to be the result of mixing the light reflected from the dark end with that from the yellow triangular part.

We now naturally come to the true iridescent feathers, of which the Peacock may be taken as an example. The iridescent barbules are made up of flat, wonderfully thin cells, arranged end to end, as shown in figure 5. When examined with transmitted light, they are seen to be films full of a brownish pigment more or less evenly dispersed through the mass. When cut in sections and looked at on edge they resemble, even under quite high powers, the edge of a piece of paper. Here we have the most admirable contrivance for the production of iridescent light, the plates being fully thin enough, and all white light which may get through the walls being taken up by the brown pigment within. All the parts of the eye are constructed on the same plan, and only provided with brownish pigments, hence the color must be due to variations in the thickness. Here it is well to notice that the colors are quite constant.

The brilliant colors of these feathers have often been ascribed to irregularities of surface, the traces of the cell cavities being mistaken for pits on the surface. That this is an error is at once shown by examining a section.

Before leaving the subject I cannot refrain from calling attention to the wonderful diversity of means employed, as well as their complexity in the production of feather colors. Among the Parrots we have the most skilful painting combined with accidental colors. Yet all ornithologists base specific differences on slight variations of color, and this in spite of the fact that birds may change their color according as they are wet or dry, owing to the nature of their food, or to slight differences in the quantity of pigment.

In this they are no doubt often right, but when we come to varieties based on the very faintest distinctions of color and form, we may well pause till more is known of avian physiology.

#### EXPLANATION OF PLATE I.

*Fig. 1.* Diagrammatic representation of the effect of a film on light.

*Fig. 2.* Transverse section of a barb of *Chlorophanus atrocristatus*; Hartnack 3-9 in. the light part yellow, the dark part dark brown.

*Fig. 3.* Transverse section of a barb of *Cyanocitta cristata*. Hart. 3-9 in.

*Fig. 4.* Same of *Cyanospiza cyanea* ♂.

*Fig. 5.* Two sections of a barbule of a Peacock.

*Fig. 6.* Section of barb of *Sialia sialis* much magnified.

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#### ON A COLLECTION OF BIRDS LATELY MADE BY MR. F. STEPHENS IN ARIZONA.

BY WILLIAM BREWSTER.

(Continued from p. 94.)

33. **Peucedramus olivaceus** (*Giraud*) *Coues*. OLIVE-HEADED WARBLER. — The Olive-headed Warbler, one of Giraud's famous "sixteen" Texas species, has found an unquestioned place in our fauna only on the strength of three Arizona specimens, taken by Mr. Henshaw at Mount Graham, in Septem-

ber, 1874. Accordingly the acquisition of the fine series catalogued below can scarcely fail to be a matter of much interest. As will appear from the accompanying data, Mr. Stephens met with the bird in only a single locality in the Chiricahua Mountains where it was apparently not uncommon in March: but he writes of a previous specimen (an adult male) taken among the Santa Catarina Mountains, in February, 1880, a date which seems to imply that the species winters in the latter range. His observations throw no light on its still unknown breeding haunts.

The specimens obtained during the past season were found in pine woods on the mountain sides at an elevation of from ten to twelve thousand feet. Although individuals often occurred not far from one another, two were rarely seen in actual companionship. The only exception to this is noted under date of March 24, when a small flock was met with on a steep slope near the summit of one of the mountains. In their actions these Warblers reminded Mr. Stephens of *Dendroica occidentalis*. They spent much of their time at the extremities of the pine branches where they searched among the bunches of needles for insects, with which their stomachs were usually well filled. Occasionally one was seen to pursue a falling insect to the ground, where it would alight for a moment before returning to the tree above. The only song heard consisted of "a few low notes" which were rarely uttered, but a peculiar "cheerp" was repeated at frequent intervals.

The examples before me illustrate a fact which I do not find mentioned by previous writers. viz., that during the first year the males wear a plumage similar to that of the females. I have three in this condition; two of them, although in unworn dress, are absolutely undistinguishable from adults of the opposite sex; the third (No. 77), however, has the throat appreciably tinged with the brownish-saffron of the adult male. The females show some variation in respect to the dusky patch on the side of the head. In most of them it is confined to the auriculars, and even there is much mixed with yellow; but No. 46 has a continuous, dull-black stripe extending from the bill through the eye, and spreading over the auriculars in a broad, well-marked patch. Nos. 94 and 101 differ from the others in having the crown so slightly washed with olive-green that the whole upper surface is nearly uniform, a condition which I take to be the immature one of this sex. The adult males show but little individual variation. Both sexes and all ages have the basal half of the lower mandible light brown.

44. ♂ ad., Morse's Mill, Chiricahua Mountains, March 14, Length, 5.10; extent, 9; wing, 3.12; tail, 2.35; culmen, .56; tarsus, .72.

- 45, ♂ ad., same locality and date. Length, 5.40; extent, 9.20; wing, 3.16; tail, 2.55; culmen, .55; tarsus, .69. Iris dark brown.
- 72, ♂ ad., Morse's Mill, March 19. Length, 5.40; extent, 8.90.
- 91, ♂ ad., Morse's Mill, March 24. Length, 5.40; extent, 9; wing, 3.08; tail, 2.50; culmen, .55; tarsus, .75.
- 92, ♂ ad., same locality and date. Length, 5.20; extent, 8.90.
- 102, ♂ ad., Morse's Mill, March 25. Length, 5.30; extent, 8.80; wing, 3.10; tail, 2.44; culmen, .56; tarsus, .75.
- 77, ♂ im., Morse's Mill, March 20. Length, 5.20; extent, 8.90; wing, 3.03; tail, 2.37; culmen, .55; tarsus, .77. In plumage of the ♀.
- 90, ♂ im., Morse's Mill, March 24. Length, 5.10; extent, 8.50; wing, 2.85; tail, 2.30; culmen, .56; tarsus, .71. Same remarks.
- 103, ♂ im., Morse's Mill, March 25. Length, 5.10; extent, 8.50; wing, 2.90; tail, 2.33; culmen, .57; tarsus, .67. Same remarks.
- 46, ♀ ad., Morse's Mill, March 14. Length, 5.20; extent, 8.50; wing, 2.93; tail, 2.35; culmen, .56; tarsus, .73.
- 47, ♀ ad., same locality and date. Length, 5; extent, 8.30; wing, 2.87; tail, 2.18; culmen, .58; tarsus, .73.
- 81, ♂ ad., Morse's Mill, March 21. Length, 5; extent, 8.50; wing, 2.76; tail, 2.35; culmen, defective; tarsus, .72.
- 93, ♀ ad., Morse's Mill, March 24. Length, 5.20; extent, 8.80.
- 94, ♀ ad., same locality and date. Length, 5; extent, 8.20; wing, 2.84; tail, 2.18; culmen, defective; tarsus, .71.
- 101, ♀ ad., Morse's Mill, March 25. Length, 5.10; extent, 8.50; wing, 2.87; tail, 2.22; culmen, .58; tarsus, .75.

34. ***Dendroeca æstiva* (Gmel.) Baird.** YELLOW WARBLER.

210, ♂ ad., Cienega Station, April 16. Length, 5; extent, 7.50; wing, 2.75; tail, 2.20; tarsus, .74. "Iris dark brown; bill dark horn color above, lighter below; legs pale brown. Common in the migrations."

35. ***Dendroeca coronata* (Linn.) Gray.** YELLOW-RUMPED WARBLER. — Chiricahua Mountains; a single specimen, taken March 26.

From its general dispersion over North America, the Yellow-rumped Warbler was of course to be expected in Arizona, at least as a visitor, but I cannot learn that it has been previously detected within the limits of that Territory. Mr. Stephens, however, sends me an adult female which must be referred to *coronata*, although it is in some respects peculiar, if not intermediate between that species and *auduboni*. The wing-bands are as distinctly separated as in *coronata* (with females and immature males of both species this character is not always well-defined), and the throat, generally, is equally white, but on its left side, adjoining the maxillary line, there is a small patch of the faintest possible yellow. The light superciliary stripes, which should be at least indicated in female *coronata*, are also entirely wanting.

114, ♀ ad., Chiricahua Mountains, March 26. Length, 5.50; extent, 8.70; wing, 2.98; tail, 2.52. "Iris brown."

36. **Dendroeca auduboni** (Townsend.) Baird. AUDUBON'S WARBLER.

343. ♂ ad., Tucson, May 7. Length, 5.80; extent, 9.52; wing, 3.05; tail, 2.75. "Iris dark brown; bill and legs black."

37. **Dendroeca nigrescens** (Townsend.) Baird. BLACK-THROATED GRAY WARBLER. — On April 1, Mr. Stephens secured five males of this species among the Chiricahua Mountains. The only additional specimens in the collection are two females taken late in the season (No. 203, ♀ ad., Cienega Station, April 15. No. 357, Santa Rita Mountains, May 12.).

38. **Dendroeca townsendi** (Nutt.) Baird. TOWNSEND'S WARBLER.

2.98. ♀ ad., Tucson, April 28. Length, 5.10; extent, 7.70; wing, 2.45. "Iris dark brown; bill and legs black; soles of the feet yellow. Among mesquites."

373. ♂ ad., Santa Rita Mountains, May 13. Length, 5.30; extent, 8.10; wing, 2.64.

374. ♀ ad., same locality and date. Length, 4.90; extent, 7.40; wing, 2.44. "Iris dark brown; soles of feet yellowish. Water oaks of foot-hills; very fat."

Even the most adult males of this species seem to have the throat-patch slightly sprinkled with yellow. At least I have yet to see one with the black absolutely pure and unmixed.

39. **Siurus naevius** (Bodd.) Coues. NORTHERN WATER THRUSH. — A single specimen taken May 4, at Tucson. It was among willows on the borders of a stream.

This example differs from New England ones in being darker above and less yellowish beneath. In these respects, as well as some minor ones, it resembles a rather peculiar style from West Virginia to which I once called attention.\* Mr. Ridgway kindly furnishes the following opinion regarding its relationship with *S. notabilis*. "The *Siurus* from Tucson is very different in proportions from the type of *notabilis*, with which I have compared it, but it *may* be a small individual of that form. The wing is about the same length, but the bill and tail are very much shorter, and the tarsi more slender. The color above is grayer, the streaks beneath much narrower, and the spots on the throat much smaller." *Notabilis*, based as it is on a single specimen, and instituted in a species which varies to an unusual degree in size, color and markings, seems to me, however, to be, at best, a very doubtful race.

329. ♂ ad., Tucson, May 4. Length, 6.20; extent, 9.50; wing, 3.10; tail, 2.32; tarsus, .85; culmen, .64. "Iris brown; bill black above, brown below; legs light brown. Very fat. Stomach contained insects."

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\* Annals N. Y. Lyceum Nat. Hist., Vol. XI, p. 136.

40. **Geothlypis macgillivrayi** (*Aud.*) *Baird*. MACGILLIVRAY'S WARBLER.—Two specimens collected at Tucson (♀ April 20, ♂ June 8). "I have not found it common in either Arizona or New Mexico."

41. **Geothlypis trichas** (*Linn.*) *Caban*. MARYLAND YELLOW-THROAT.—Mr. Stephens found this species "abundant along streams," an experience at variance with that recorded by Mr. Henshaw, who met with it but twice while in Arizona.

The only specimen taken agrees closely with some examples from the Truckee River, Nevada, and differs from my eastern representatives, in having the upper parts yellowish-olive instead of olive-green; the crown-band much broader and creamy white in color; the wings and tail longer; the yellow beneath richer, and extending more over the abdomen. Mr. Ridgway has already called attention\* to some of these differences which, as he now writes me, would be enough to warrant the varietal separation of the western bird, were it not that specimens from both sections of the country occasionally vary in such a manner as to invalidate any characters that could at present be proposed. With the acquisition of better series, however, it is probable that the representatives of two regions, as yet undefined, will be found to present sufficiently constant characteristics to deserve distinctive names.

219, ♂ ad., Cienega Station, April 17. Length, 5.40; extent, 6.90; wing, 2.16; tail, 2.40; culmen, .55. "Iris brown; bill black, bluish beneath; legs pale brown."

42. **Icteria virens longicauda** (*Lawr.*) *Coues*. LONG-TAILED CHAT.—This bird was observed only in the vicinity of Tucson. The first specimen was taken April 30, and it soon afterwards became abundant.

310, ♂ ad., Tucson, April 30. Length, 7.50; extent, 9.40; wing, 3.12; tail, 3.52. "Bill and legs black."

318, ♂ ad., Tucson, May 3. Length, 7.70; extent, 9.60; wing, 3.05; tail, 3.61.

335, ♂ ad., Tucson, May 5. Length, 7.30; extent, 9.70; wing, 3.12; tail, 3.45.

521, ♂ ad., Tucson, June 11. Length, 7.10; extent, 9.40; wing, 3.15; tail, 3.36.

43. **Myiodiocetes pusillus pileolatus** (*Pall.*) *Ridgw.* PILEOLATED WARBLER.

Although Mr. Henshaw referred all his Arizona Black-capped Flycatchers to *pusillus*, mine are absolutely typical of *pileolatus*; in fact they are brighter than some specimens from Nicasio (California), the yellow below being richer, and the upper surface more yellowish, while the bill is equally

\* Hist. N. A. Birds, Vol. I, 1874, pp. 297-298.

narrow and several shades lighter in color. Compared with eastern examples they of course present an even greater contrast. Dr. Coues was undoubtedly right in saying (Birds of the Colorado Valley, p. 327) that *pileolatus* "is not confined to the Pacific coast region"; but I cannot agree with him in thinking it an inconstant form. On the contrary, I find its characters, as proposed by Mr. Ridgway, so well maintained that any one of my western birds can be separated at a glance when placed in a series of twenty-one specimens from the Atlantic States.

221. ♂ ad., Cienega Station, April 17. Length, 4.70; extent, 6.80; wing, 2.17; tail, 2.23; width of bill below nostrils, .12. "Iris brown; bill dark above, pale brown below. Common here in willows and underbrush along streams."

257. ♂ ad., Tucson, April 21. Length, 4.90; extent, 7; wing 2.27; tail, 2.30; width of bill below nostrils, .12.

44. **Setophaga picta Swains.** PAINTED REDSTART. — During the past season this beautiful species was met with only among the Chiricahua and Santa Rita Mountains, but in 1876 Mr. Stephens found it in New Mexico, a Territory from which I believe it has not previously been reported. In the Chiricahua Mountains it was not uncommon after March 21, and many specimens were taken near Morse's Mill, at an elevation of fully seven thousand feet. They occurred most numerous among pines, in a cañon where they had been previously observed in April, 1880. This experience, it will be observed, differs somewhat from that recorded by Mr. Henshaw, who says: "It appears not to inhabit the high mountains nor the extreme lowlands, but to occupy an intermediate position, and to find the rocky hills covered with a sparse growth of oak most congenial to its habits."

In the Santa Rita Mountains, where it was rather common in May, Mr. Stephens had the good fortune to find its previously unknown nest and eggs. The nest, which is now before me, is large, flat and shallow. It is composed of bark, coarse fibres from weed-stalks, and fine, bleached grasses, the latter, with a few hairs, forming a simple lining. The cup measures 2.10 inches in width by 1 inch in depth; while the external diameter of the whole structure is rather more than 5 inches, and its depth about 1.50. The eggs, which were three in number, measure respectively .64×.51; .64×.50; and .66×.49. They are clear, dead white, delicately spotted with light reddish-brown, the markings being sparsely distributed over the general surface of the egg, and handsomely wreathed about its larger end. Neither nest



nor egg resembles that of *S. ruticilla*. But a greater surprise is the character of the nesting-site, which was "under a projecting stone, in a bank near a small stream." This position is so unexpected that, from an unproved collector, I should hesitate to accept the accompanying evidence of identification, which is a simple statement that the parent was sitting, and was distinctly seen. But knowing as well as I do Mr. Stephens' unusual accuracy and conscientiousness in such matters I cannot doubt the correctness of his determination, especially as the Painted Redstart is a bird of such striking colors and markings that it could not possibly be mistaken by one who is so familiar with its appearance in life.\* After all the case is not more peculiar than that presented among *Helminthophilæ* by Lucy's warbler which, as has just been shown, departs from the normal nesting habits of the genus and builds in holes, behind loose bark and in all sorts of unexpected places. The nest above described was taken May 18, when the eggs were sufficiently advanced in incubation to show that the clutch was complete.

Mr. Henshaw comparing the sexes, says: "The adult plumage of the sexes differs little, though the coloration in the female is quite perceptibly duller throughout. The black is less lustrous; the wings are blackish brown instead of pure black; the white on the wing confined to the coverts, and only just visible on the edges of the secondaries." These differences, however, are not always maintained for one of the two adult females before me is quite as bright as the average male, while the black is not less lustrous, and the white edging on the secondaries is even broader. The other is more like those examined by Mr. Henshaw, but seems to be peculiar in having the sides, with a broad collar across the nape, fine stone-gray.

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\* A letter just received from Mr. Stephens contains the following very satisfactory confirmation of the above evidence. "The identification of your nest of *S. picta* is positive. I saw the parent plainly, and could easily have shot her. Indeed I should never have found the nest had not my attention been called to it by the birds flying from it as I brushed past almost within touching distance. When first found, the nest contained three eggs. I thought it best to leave them until next day to see if more might not be laid. \* \* \* When I returned, however, the bird was not at home and as it was a long, rough walk to camp, I took the nest, their being no occasion to visit the spot again. \* \* \* The locality was a wide part of a cañon between the two Santa Rita peaks, perhaps two miles from the top of the high ridge connecting them. Up this cañon passed an old Mexican road to the pine timber above. It had not been used for many years. In its course it cut through an occasional projecting bank, and in one of these places was the nest. It was under a small boulder in the side of a nearly perpendicular bank, which was but two or three feet high. The vicinity was heavily timbered with oak and sycamore. I regard the position as exceptional: still, it may be the rule."

45. **Vireo gilvus** (*Vieill.*) *Bonap.* WARBLING VIREO.—Found among all the well-timbered mountains visited, but nowhere as a common bird.

Of the several characters which are said to distinguish var. *swainsoni* from *gilvus* proper, I can appreciate only the slightly different shape of the bill. The relative length of the wing-quills is an absolutely inconstant characteristic with birds from any of the localities represented in my series, while I do not find that western specimens—at least California and Arizona ones—are either paler or grayer than many we get in the Atlantic States. Indeed, nearly the darkest one in my whole suite comes from Arizona. In view of these facts I cannot regard *swainsoni* as worthy of varietal recognition.

46. **Vireo solitarius cassini** (*Xantus*) *Ridgw.* CASSIN'S VIREO.—Common among the foot-hills of the mountains.

Mr. Henshaw has so satisfactorily defined\* the characters which respectively distinguish the Cassin's and Plumbeous Vireos from *solitarius* proper, as well as from each other, that there is no room for any further remarks on what, previous to his examination, was a very tangled problem. The specimens mentioned below are all unmistakably referable to *cassini*, although one or two of them present slight approaches to *plumbeus*. It is a singular fact that Mr. Stephens did not meet with any typical examples of the latter race.

209, ♂ ad., Cienega Station, April 16. Length, 5.40; extent, 8.70. "Iris brown; bill dark horn-color above, lighter below; legs dark bluish."

214, ♀ ad., same locality and date. Length, 5.60; extent, 9.10; wing, 3; tail, 2.44.

236, ♀ ad., Tucson, April 19. Length, 5.60; extent, 8.70; wing, 2.89; tail, 2.41.

316, ♀ ad., Tucson, May 2. Length, 5.30; extent, 8.50; wing, 2.71; tail, 2.26.

346, ♀ ad., Tucson May 7. Length, 5.30; extent, 9; wing, 2.76; tail, 2.23. "Very fat. Would not have laid for a long time."

354, ♂ ad., Santa Rita Mountains, May 11. Length, 5.10; extent, 8.80; wing, 2.82; tail, 2.27. "Iris brown; bill nearly black, bluish at base below; legs lead-color."

47. **Vireo huttoni stephensi** *var. nov.* STEPHENS' VIREO.

CH. SP.—♂ ♀ *Similis V. huttoni* sed rostro robustiori, alis longioribus. Supra griseo-cinereus, infra fusco-albidus. Uropygio et marginibus caudæ sordide virenti-olivaceis. Alis albo bifasciatis; remigibus albo-marginatis. Lorix et orbe circum-oculari (macula fusco-brunnea in palpebra superiori excepta), cinereo-albis.

Adult ♂ (No. 5728, author's collection—collector's No., 41—Chiricahua Mountains, Arizona, March 14, 1881. F. Stephens). Bill stout; wings from .30 to .40 inches longer than tail. Above grayish-ash; the crown.

\* U. S. Geol. Surveys W. 100 Merid., 1879, pp. 291-293.

vertex and sides of head and neck nearly pure; the back faintly tinged with olive; the rump and an edging on the tail-feathers, dull olive-green. Wings with two nearly confluent bands on the coverts, and the outer edges of the inner secondaries, broadly white; outer quills edged more narrowly with the same color. Beneath brownish or smoky-white, with a mere wash of yellowish on the sides and crissum. Upper eyelid dusky brown; remainder of orbital region, with the lores, ashy-white in decided contrast with the nearly clear cinereous of the head generally. Lining of wings white.

*Dimensions.* Length, 5.20; extent, 8.50; wing, 2.90; tail, 2.25; culmen, .50.

*Habitat.* Arizona and New Mexico.

Four additional specimens offer no variations affecting any of the characters above detailed.

In its generally dull, grayish coloration, with little trace of olive or yellow shades, this Vireo is curiously like *V. pusillus*, but the under parts are obscured with brownish, while the differences in size and proportions are too evident to require detailed comparison. From the smaller, much brighter-colored *V. huttoni*, which is unmistakably its nearest United States relative, it may be distinguished by the following diagnoses.

*V. huttoni.*—Wing, 2.28 to 2.37. Olive-green above and olivaceous-yellowish beneath. No clear white anywhere.

*V. huttoni stephensi.*—Wing, 2.55 to 2.90. Grayish-ash above with no decided olive-green excepting on the rump and tail. Beneath brownish-white, untinged with yellowish excepting on the sides and crissum. Wing-bands pure white and nearly confluent.

It will be observed that the above differences are closely parallel to those which separate *Vireo belli* and *V. pusillus*, while they are in no respect less important. Indeed were I disposed to emphasize certain peculiarities presented in the wing-formula of my type, it would not be difficult to make out an equally good case of specific distinctness, but unfortunately, the relative length of the wing-quills (including the spurious primaries) proves to be quite as variable in *V. huttoni* and its Arizona race, *stephensi*, as I find it to be in *V. pusillus* and *V. belli*, and, I might add, in all closely allied species which I have so far studied. In short, I am convinced that this feature, if ever of any diagnostic value, is so with only a small proportion of the birds to which it has been so freely and confidently applied.

In naming this Vireo after its discoverer, Mr. F. Stephens, I have paid but a deserved compliment to that gentleman's zeal and energy as a field ornithologist. He notes the bird as "not uncommon in scrub-oaks" among both the Chiricahua and Santa Rita Mountains. He also writes me that he has taken specimens in New Mexico, where, near Fort Bayard, a nest with four eggs was obtained in 1876. In both Territories it seems to be confined to the mountain ranges, where it undoubtedly breeds in all suitable localities.

41, ♂ ad., Morse's Mill, Chiricahua Mountains, March 14. Length, 5.20; extent, 8.50; wing, 2.90; tail, 2.25; tarsus, .73; culmen, .50; depth of bill at nostrils, .15. "Iris brown."

50, ♂ ad., Morse's Mill, March 16. Length, 4.90; extent, 8; wing, 2.55; tail, 2.20; tarsus, .73; depth of bill at nostrils, .15.

118, ♂ ad., Morse's Mill, March 28. Length, 5; extent, 7.90; wing, 2.68; tail, 2.30; tarsus, .70; culmen, .50; depth of bill at nostrils, .15.

140, ♂ ad., Chiricahua Mountains, March 31. Length, 5.10; extent, 8.40; wing, 2.65; tail, 2.25; tarsus, .73; culmen, .49; depth of bill at nostrils, .15.

353, ♂ ad., Santa Rita Mountains, May 11. Length, 5; extent, 8.10; wing, 2.74; tail, 2.25; tarsus, .70; culmen, .48; depth of bill at nostrils, .15.

Seven California specimens of *V. huttoni* measure as follows:—

1443, ♂, Nicasio. Wing, 2.35; tail, 2.20; tarsus, .75; culmen, .50; depth of bill, .11.

1445, ♂, Nicasio. Wing, 2.31; tail, 2.15; tarsus, .76; culmen, .51; depth of bill, .11.

1444, ♀, Nicasio. Wing, 2.35; tail, 2.25; tarsus, .76; culmen, .49; depth of bill, .10.

1446, ♀, Nicasio. Wing, 2.32; tail, 2.28; tarsus, .74; culmen, .50; depth of bill, .14.

6800, ♂, Berkeley Co. Wing, 2.37; tail, 2.30; tarsus, .75; culmen, .46; depth of bill, .11.

6801, ♀, Berkeley Co. Wing, 2.28; tail, 2.15; tarsus, .75; culmen, .51; depth of bill, .11.

6339, ♀, Riverside. Wing, 2.34; tail, 2.14; tarsus, .75; culmen, .52; depth of bill, .14.

48. **Vireo pusillus** *Coues*. LEAST VIREO. — An abundant summer species frequenting willows along streams and, near Tucson, thickets of mesquites. "It is active, restless and very noisy."

Numerous nests were taken. The only one sent me is a shallower, but nevertheless rather more elaborate structure, than that of *V. belli* to which, however, it bears a strong resemblance. It is mainly composed of fibrous shreds, apparently obtained from the stalks of some herbaceous plant. The lining is of delicate, bleached grasses, which are very neatly arranged. The eggs are white with a cluster of small black spots about the larger ends. The clutch comprised three, a number which was not exceeded in any of the other nests. The notes relating to this set are as follows: "Tucson, June 11. Nest pensile between the forks of a small mesquite branch, about five feet from the ground, in a

thicket of weeds and brush. Incubation commenced. Female shot. This species seems to abandon a nest if it is found before any eggs are laid."

205, ♂ ad., Cienega Station, April 15. Length, 5; extent, 7.10; wing, 2.21; tail, 2.25. "Iris dark brown; bill dark above, light below; legs dark."

235, ♀ ad., Tucson, April 19. Length, 5.10; extent, 7.30; wing, 2.23; tail, 2.25.

262, ♂ ad., Tucson, April 22. Length, 6; extent, 7.10; wing, 2.28; tail, 2.34.

275, ♂ ad., Tucson, April 25. Length, 5; extent, 7; wing, 2.21; tail, 2.25.

276, ♀ ad., same locality and date. Length, 4.90; extent, 6.90; wing, 2.18; tail, 2.25.

282, ♂ ad., same locality and date. Length, 5; extent, 7.10; wing, 2.30; tail, 2.30.

461, ♀ ad., Camp Lowell, May 31. Length, 5; extent, 6.90; wing, 2.21; tail, 2.25. "Laying."

499, ♀ ad., Tucson, June 7. Length, 5; extent, 6.90. Skin lost.

589, ♀ ad., Camp Lowell, June 24. Length, 4.80; extent, 6.80; wing, 2.21; tail, 2.25.

49. **Vireo vicinior** *Coues*. GRAY VIREO.—The only individuals met with were a male and female—apparently a mated pair—which were taken at Tucson, on April 26. "They were in low brush and were very shy."

286, ♀ ad., Tucson, April 26. Length, 5.60; extent, 8.20; wing, 2.63; tail, 2.67; tarsus, .80.

287, ♂ ad., same locality and date. Length, 5.60; extent, 8.30; wing, 2.58; tail, 2.70; tarsus, .80. "Iris dark brown; bill plumbeous, darkest above; legs light plumbeous."

50. **Lanius ludovicianus excubitorides** (Sw.) *Coues*. WHITE-RUMPED SHRIKE. — "Common and generally distributed."

It is unfortunate that so much prominence has been given to the white rump of *excubitorides* as a distinguishing character, for I have yet to see a good series of Shrikes from any Western locality, excepting, possibly, Arizona, which did not afford a considerable percentage of dark-rumped birds; and conversely, it is by no means difficult to find light-rumped specimens in the East. The same instability also affects most of the other characters which have been assigned to *excubitorides*, as is sufficiently shown by the various conflicting rulings of the authorities regarding the precise definition and limits of distribution of this troublesome race. The only differential points which seem to me to hold good with any number of specimens, are the lighter, purer ash of the upper parts as compared with those of *ludovicianus*, and the smaller and very much weaker bill.

But if these alone are to be depended upon, it becomes necessary to limit the distribution of *ludovicianus* proper to the Gulf States, Georgia and the Carolinas, if not strictly to Florida, and to refer all representatives from the United States at large, east of California, to *excubitorides*; and this course, I believe, will ultimately have to be adopted. The proper position of the dark California form which is so curiously like *ludovicianus* remains to be satisfactorily determined.

51. **Ampelis cedrorum** (Vieill.) Baird. CEDAR WAX-WING.—Met with but once, at Galeysville, where on January 12, 1881, several were shot from a small flock. Mr. Henshaw took a single specimen near Camp Apache, in September, 1873.

52. **Progne subis** (Linn.) Baird. PURPLE MARTIN.—“Common.”

438, ♂ ad., Tucson, May 26. Length, 7.6; extent, 15.7; wing, 5.45. “Iris dark brown; bill black; legs blackish.”

53. **Petrochelidon lunifrons** (Say) Lawr. CLIFF SWALLOW.—At Yuma. “They were breeding abundantly along a bluff above the town.

54. **Tachycineta bicolor** (Vieill.) Caban. WHITE-BELLIED SWALLOW.—“Common in the migrations.”

195, ♂ ad., Cienega Station, April 15. “Iris dark brown; bill black; legs brown.”

55. **Tachycineta thalassina** (Swains.) Caban. VIOLET-GREEN SWALLOW. “Common.”

212, ♀ ad., Cienega Station, April 16. “Iris dark brown; bill and legs black.

56. **Stelgidopteryx serripennis** (Aud.) Baird. ROUGH-WINGED SWALLOW.—Common. Breeds.

211, ♀ ad., Cienega Station, April 16. “Iris and legs dark brown.”

57. **Pyranga ludoviciana** (Wils.) Bp. LOUISIANA TANAGER.—Santa Rita Mountains. “They frequent oaks, and are not very common.”

408, ♂ ad., Santa Rita Mountains, May 18. Length, 7.30; extent, 7.60; wing, 3.80; tail, 3.17. “Iris dark brown; bill blackish horn-color above, greenish-yellow below.”

58. **Pyranga hepatica** Swains. LIVER-COLORED TANAGER.—This Tanager was not uncommon in the Santa Rita Mountains, where the first specimen was taken on May 12. “They range from the foot-hills, through the oaks to the lower pines on the mountains.”

359, ♀ ad., Santa Rita Mountains, May 12. Length, 7.80; extent, 12.10; wing, 3.75. “Bill black above, bluish horn-color below; legs lead-color; iris brown.

377, ♂ ad., Santa Rita Mountains, May 14. Length, 8.20; extent, 12.70; wing, 4.20.

380, ♀ ad., Santa Rita Mountains, May 14. Length, 8.10; extent, 12.40; wing, 4.07. "This bird would have laid in about ten days."

386, ♂ ad., Santa Rita Mountains, May 15. Length, 8.20; extent, 12.80; wing, 4.10.

59. ***Pyrranga æstiva cooperi* Ridgw.** COOPER'S TANAGER.  
—Mr. Stephens found this bird rather common at a point about five miles south of Tucson, where it frequented the cottonwoods along a small river. He also informs me that in May, 1875, he took several specimens on the Rio Grande River, between Albuquerque and Mesilla. and some others on the Gila, in New Mexico, during May and June.

227, ♂ ad., Tucson, April 19. Length, 8.10; extent, 12.40; wing, 3.83; tail, 3.50. "Iris brown; bill pale horn-color; legs pale brown. Skin very tender. The first seen this season."

268, ♂ ad., Tucson, April 23. Length, 8.20; extent, 12.40.

297, ♂ ad., Tucson, April 27. Length, 7.90; extent, 12.20; wing, 4; tail, 3.60.

515, ♂ ad., Tucson, June 10. Length, 8.10; extent, 12.20; wing, 3.85; tail, 3.60.

522, ♂ im. Tucson, June 11. Length, 8; extent, 12.20; wing, 3.78; tail, 3.46. In mixed yellow and red plumage.

526, ♂ ad., same locality and date. Length, 8.10; extent, 12.50; wing, 3.89; tail, 3.45.

579, ♂ ad., Camp Lowell, June 23. Length, 8; extent, 11.60; wing, 3.99; tail, 3.58.

339, ♀ ad., Tucson. May 7. Length, 7.90; extent, 12.20; wing, 3.75; tail, 3.39.

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## NOTES ON THE SUMMER BIRDS OF THE UPPER ST. JOHN.

BY CHARLES F. BATCHELDER.

(Concluded from page 111.)

41. ***Carpodacus purpureus* (Gm.) Bd.** PURPLE FINCH.—Common.

42. ***Astragalinus tristis* (Linn.) Cab.** GOLDFINCH.—Common.

Though somewhat beyond the limits of my subject, I quote the following from Mr. McLeod's notes: "This winter [1876-77] they have been abundant, although the season is very severe. I have seen them at this time of year but once before." The Goldfinch has been supposed not to winter north of Massachusetts.

43. *Chrysomitris pinus* (Wils.) Bp. PINE FINCH.—Seen in May at Grand Falls. Mr. H. A. Purdie tells me that he observed it at Houlton in June, 1878.

44. *Passerculus sandwichensis savanna* (Wils.) Ridgw. SAVANNA SPARROW.—Common in the pastures at Grand Falls. At Fort Fairfield it was common. It was found in grassy fields, especially along the roadsides.

45. *Poecetes gramineus* (Gm.) Bd. GRASS FINCH.—Common at Fort Fairfield. Some seen in the open fields at Grand Falls.

46. *Melospiza fasciata* (Gm.) Scott. SONG SPARROW.—Abundant at Grand Falls. It was common at Fort Fairfield.

47. *Melospiza palustris* (Wils.) Bd. SWAMP SPARROW.—“Not common” at Houlton. Not found at Fort Fairfield or Grand Falls.

48. *Junco hyemalis* (Linn.) Scl. BLACK SNOWBIRD; “BLUEBIRD.”—Very common at Fort Fairfield. At Grand Falls it was very abundant everywhere.

49. *Spizella socialis* (Wils.) Bp. CHIPPING SPARROW.—This bird was quite abundant at Grand Falls. The nests found were not the loose structures they are in Massachusetts, but were well lined with hair. It was rather common at Fort Fairfield.

50. *Zonotrichia albicollis* (Gm.) Bp. WHITE-THROATED SPARROW.—Very abundant at Grand Falls wherever there was dead wood on the ground. At Fort Fairfield also it was very abundant; this bird and *Junco hyemalis* were the commonest species. The nests were apt to be in a clearing near the edge of woods, and frequently were in damp places. They were often under a fallen branch, or at the foot of a sapling, and were but slightly concealed.

The White-crowned Sparrow is probably only a migrant through this section. With regard to its abundance, however, I quote the following from Mr. McLeod's notes: “These Sparrows make their first appearance from May 10th to 18th. Some seasons they are very abundant, scores of them at a time feeding in my garden. By June 1 they have disappeared. In the autumn I have seen but one flock of them.”

51. *Zamelodia ludoviciana* (Linn.) Coues. ROSE-BREADED GROSBILL.—Common in low hard woods at Grand Falls. Rather common at Fort Fairfield, apparently more so than in eastern Massachusetts. Rather common at Houlton.

52. *Dolichonyx oryzivorus* (Linn.) Swains. BOBOLINK.—Apparently not rare at Fort Fairfield. Found in grassy fields and meadows near the river. Not observed at Grand Falls. At Houlton “arrives by the 25th of May, common by June 15.” July 2, on our return from Fort Fairfield, Mr. Dwight and I saw them at several places along the St. John River above Fredericton.

53. *Agelaius phoeniceus* (Linn.) Vieill. RED-WINGED BLACKBIRD.—“Quite common at Eel River, ten miles from Houlton” (R. R. McL.). It does not occur at Fort Fairfield or Grand Falls.



54. *Quiscalus purpureus æneus* Ridgw. CROW BLACKBIRD.—Common at Fort Fairfield, in the town, along the river, and about a small pond back in the woods. At Grand Falls it was not uncommon about the town. "Very common" at Houlton.
55. *Corvus corax* Linn. RAVEN.—Rare at Grand Falls. Not met with at Fort Fairfield. "Very rare" at Houlton.
56. *Corvus americanus* Aud. CROW.—Common.
57. *Cyanocitta cristata* (Linn.) Strickl. BLUE JAY.—Common at Grand Falls. At Fort Fairfield it was rather common, but shy and seldom seen.
58. *Perisoreus canadensis* (Linn.) Bp. CANADA JAY.—At Houlton: "very common. These birds do not often appear in the thickly settled part of the town, but are very abundant around the lumber camps in this vicinity." This no doubt explains the fact that the species was not seen by any of us at Grand Falls and Fort Fairfield.\*
59. *Tyrannus carolinensis* (Linn.) Bd. KINGBIRD.—Rather common at Fort Fairfield. At Grand Falls several were seen, but it was not common.
60. *Myiarchus crinitus* (Linn.) Caban. GREAT CRESTED FLYCATCHER.—In June, 1878, Messrs. H. A. Purdie and Ruthven Deane observed a pair nest-building at a point in New Brunswick about six miles east of Houlton.
61. *Sayornis fuscus* (Gm.) Bd. PEWEE.—One was observed at Fort Fairfield, June 28. "Very rare" at Houlton.
62. *Contopus borealis* (Swains.) Bd. OLIVE-SIDED FLYCATCHER.—Common in the woods at Grand Falls. This species was rather common at Fort Fairfield. We usually saw them perched on the tops of tall dead trees in clearings. They were rather shy.
63. *Contopus virens* (Linn.) Caban. WOOD PEWEE.—At Fort Fairfield it appeared to be not uncommon. It was not met with, however, at Grand Falls.
64. *Empidonax flaviventris* Bd. YELLOW-BELLIED FLYCATCHER.—At Fort Fairfield this species was rather common in wet evergreen woods, especially in those that had small streams flowing through them. It was not observed at Grand Falls. Messrs. Purdie and Deane found it rather common at Houlton in June, 1878.†
65. *Empidonax trailli* (Aud.) Bd. TRAILL'S FLYCATCHER.—Not common at Grand Falls. They were to be found mostly where there were scattered dead trees. We did not find it at Fort Fairfield. Mr. H. A. Purdie informs me that it was not uncommon at Houlton in June, 1878.
66. *Empidonax minimus* Bd. LEAST FLYCATCHER.—Very abundant in hard woods at Grand Falls. At Fort Fairfield it was rather common.
67. *Caprimulgus vociferus* Wils. WHIP-POOR-WILL.—Mr. McLeod

\* For an account of the nesting of this species at Grand Falls, see this Bulletin, Vol. VII, p. —.

† For descriptions of the nesting of this species at Houlton and Fort Fairfield see this Bulletin, Vol. III, pp. 166-168, and Vol. IV, pp. 241, 242.

notes that there are a few at Houlton during the summer. The species was neither seen nor heard at Fort Fairfield and Grand Falls.

68. *Chordeiles popetue* (Vieill.) Bd. NIGHT-HAWK.—Very abundant at Grand Falls. At Fort Fairfield it was common; they frequented burnt lands.

69. *Chætura pelagica* (Linn.) Bd. CHIMNEY SWIFT.—At Fort Fairfield they were common, breeding both in chimneys and in hollow trees. Common in the burnt country at Grand Falls. Not many were breeding in chimneys, the people disliking to have them there.

70. *Trochilus colubris* Linn. RUBY-THROATED HUMMINGBIRD.—Common at Grand Falls. At Fort Fairfield it was apparently rather common—we saw several.

71. *Ceryle alcyon* (Linn.) Boie. BELTED KINGFISHER.—Rather common at Fort Fairfield. At Grand Falls it was to be seen wherever there was good fishing ground.

72. *Picus villosus* Linn. HAIRY WOODPECKER.—Common.

73. *Picus pubescens* Linn. DOWNY WOODPECKER.—At Fort Fairfield this species was much less common than *P. villosus*. It was not uncommon at Grand Falls.

74. *Picoides arcticus* (Swains.) Gray. BLACK-BACKED THREE-TOED WOODPECKER.—Common at Grand Falls in burnt cedar swamps. At Fort Fairfield we shot two, all we saw.

75. *Sphyrapicus varius* (Linn.) Bd. YELLOW-BELLIED WOODPECKER.—Common—the commonest Woodpecker—at Fort Fairfield. They were generally found about recent clearings, or in the more open mixed woods. At Grand Falls they were common in hard woods.

76. *Hylotomus pileatus* (Linn.) Bd. PILEATED WOODPECKER.—At Grand Falls half a dozen pairs were seen. Probably there is too little of the heavy forest left in the immediate neighborhood of Fort Fairfield to suit their tastes, as we did not meet with them. “Common” at Houlton.

77. *Colaptes auratus* (Linn.) Sw. GOLDEN-WINGED WOODPECKER.—Rather common at Fort Fairfield. Not common at Grand Falls.

78. *Coccyzus erythrophthalmus* (Wils.) Bd. BLACK-BILLED CUCKOO.—Mr. McLeod records this bird in his notes, but without comments. It was not seen at Fort Fairfield or Grand Falls.

79. *Strix nebulosa* Forst. BARRED OWL.—“Very common” at Houlton. We were shown a mounted specimen by Mr. Frank P. Orcutt at Fort Fairfield. He considered it the commonest Owl.

80. *Nyctale acadica* (Gm.) Bd. SAW-WHET OWL.—This bird is not uncommon at Houlton. Mr. Frank P. Orcutt told us that it was tolerably common at Fort Fairfield.

81. *Bubo virginianus* (Gm.) Bd. GREAT HORNED OWL.—“Very common” at Houlton. Mr. Orcutt said it was rather common at Fort Fairfield.

82. *Circus hudsonius* (Linn.) Vieill. MARSH HAWK.—Rare at Houlton. One seen at Fort Fairfield.

83. *Accipiter cooperi* Bp. COOPER'S HAWK. Not common at Grand Falls. Not observed at Fort Fairfield or Houlton.

84. *Accipiter fuscus* (Gm.) Bp. SHARP-SHINNED HAWK. — "Not common" at Houlton.

85. *Falco sparverius* Linn. SPARROW HAWK. — Commonest Hawk at Grand Falls. Not met with at Houlton or Fort Fairfield, though Mr. Orcutt considers it common at the latter place.

86. *Buteo borealis* (Gm.) Vieill. RED-TAILED HAWK. — Not common at Grand Falls. Not observed at Fort Fairfield. "Common" at Houlton.

87. *Buteo pennsylvanicus* (Wils.) Bp. BROAD-WINGED HAWK. — Not common at Grand Falls. It was found breeding at Houlton, but not met with at Fort Fairfield.

88. *Haliaeetus leucocephalus* (Linn.) Savig. BALD EAGLE. — "Not common" at Houlton.

89. *Ectopistes migratorius* (Linn.) Sw. WILD PIGEON. — Breeding at Grand Falls, but not common.

90. *Canace canadensis* (Linn.) Bp. SPRUCE PARTRIDGE. — At Houlton "mostly found in the deep fir thickets, or in the swamps of firs and cedars." Not met with at Fort Fairfield and Grand Falls, though of course it occurs there.

91. *Bonasa umbellus* (Linn.) Steph. RUFFED GROUSE. — Rather common at Fort Fairfield. At Grand Falls only a few were seen—in the hard woods.

92. *Ardea herodias* Linn. GREAT BLUE HERON. — "Common" at Houlton.

93. *Nyctiardea grisea naevia* (Bodd.) Allen. NIGHT HERON. — "Not common" at Houlton.

94. *Botaurus lentiginosus* (Montag.) Steph. — BITTERN. — "Common" at Houlton. One seen at Grand Falls.

95. *Philohela minor* (Gm.) Gray. WOODCOCK. — One seen on Little River Flats near Grand Falls. At Fort Fairfield we saw a specimen in the collection of Mr. Frank P. Orcutt, who considered it rare in that neighborhood. "A few breed in the vicinity" of Houlton.

96. *Rhyacophilus solitarius* (Wils.) Cass. SOLITARY SANDPIPER. — At Grand Falls some were seen along the river June 9 (J. A. J.).

97. *Tringoides macularius* (Linn.) Gray. SPOTTED SANDPIPER. — At Fort Fairfield it was very numerous along the Aroostook River, and was also noticed in one or two other places. It was abundant along the rivers at Grand Falls. At Houlton too it was very common.

98. *Porzana carolina* (Linn.) Bd. CAROLINA RAIL. — One seen at Fort Fairfield, June 20, in a wet meadow partly grown up with alder bushes (J. D.).

99. *Anas obscura* Gm. BLACK DUCK. — "Very common, breeding" at Houlton:

100. *Aix sponsa* (Linn.) Boie. WOOD DUCK. — "Quite common" at Houlton.

101. *Clangula glaucium americana* (Bp.) Ridgw. GOLDEN-EYE. — A few seen at Grand Falls.

102. *Mergus merganser americanus* (Cass.) Ridgw. SHELDRAKE.—Not uncommon at Grand Falls.
103. *Mergus serrator* Linn. RED-BREASTED MERGANSER.—“Very common, breeding,” at Houlton.
104. *Larus argentatus smithsonianus*, Coes. HERRING GULL.—At Houlton it is common on the neighboring lakes, where it breeds.
105. *Podilymbus podiceps* (Linn.) Lawr. PIED-BILLED GREBE.—Rare, breeds, Houlton.

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### A SKETCH OF THE HOME OF *HYLOCICHLA ALICIAE BICKNELLI*, RIDGWAY, WITH SOME CRITICAL REMARKS ON THE ALLIES OF THIS NEW RACE.

BY EUGENE P. BICKNELL.

That there remained unrecognized at this late day a bird regularly inhabiting one of the most populous portions of our country; or, indeed, that a species of eminently boreal habitat during its breeding season, and not known to occur at all at such time within the limits of the United States, should have a representative race regularly breeding in our midst, are facts for which we were little prepared. Mr. Ridgway's recent paper\* announcing these facts being necessarily of a technical nature, and confined to a formal description of the new Thrush, it has been thought well on the present occasion to allude more particularly to the character of the locality inhabited by the bird, and to some of its associates there, in connection with other sequential considerations. As the general physical character of the Catskill Mountains and the faunal features of the region will be treated by the writer elsewhere, it will be unnecessary to extend the range of the present relation from the summit of Slide Mountain in Ulster Co.,† where the new race was discovered.

On June 15, 1881, nearing the summit of this mountain, the forests of a more northern latitude were forcibly suggested. A shower had fallen during the ascent, and the sun was still obscured,

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\* “Descriptions of two new Thrushes from the United States.” Proceedings U. S. National Museum, Vol. 374, pp. 374-9.

† The highest peak of the Catskills,—4,205 feet altitude.

while a sharp wind from the northwest piercing the wet woods and sighing among the balsams, blasted and weather beaten, heightened an impression of remoteness and desolation. The evergreens, constituting the principal arboreal growth, extended off on all sides, clothing the rocky and moss-grown slopes, and presenting the striking contrast of a young and fragrant second growth clustering about the branchless and spiny trunks of their sires tottering in decay; or, with tangled and matted branches outlined here and there, as we approached the summit, against a gray and cheerless sky. Owing to the comparatively short life of these trees, that high portion of the mountain where their tribe had pitched was brought into grim contrast with its surroundings. Old age and death, continually present invading their ranks, had everywhere left their traces; flourishing clusters had been stricken in their fellowship, groups and gatherings had been divided and scattered, and like a contagion the destroyer had spread among their hosts. But the younger generations are continually forming their associations, and with green and fragrant grouping filling in deserted chambers and screening the devastation that has gone before, although only to furnish material for its continuance in the future. All this, with an occasional undergrowth of greater or less luxuriance, gave a diversified and somewhat open character to the surroundings, entirely dissimilar to that of the environing forest; conditions, which, in conjunction with humidity and elevation, have brought this mountain top into some relation with the swampland of a more northern region.

Reaching a more elevated portion of the ridge where the ground was more level and the surface less rocky, that north-woods tree, the Paper Birch (*Betula papyracea*) occasionally appeared, and more abundantly the Mountain Ash. Almost the only remnant of the dense mountain forests below was the Yellow Birch (*Betula lutea*) which, joining the undergrowth, persisted with small and stunted stature to the summit. On all sides were to be seen the white blossoms of *Viburnum lantanoides* which, though also found in the valley woodlands, had there long since flowered and was now bearing green fruit. Another characteristic shrub was *Amelanchier canadensis oligocarpa*; lower down had been found the var. *botryapium*, but here, the northern form was well marked, seeming almost specifically distinct. In the deep, damp moss, covering and filling in the rocks beneath the balsam growth,

and relieving the ruggedness of the slopes, northern plants were growing in greater or less profusion. The Dwarf Cornel (*Cornus canadensis*) grew in such close luxuriance in congenial spots, that its snowy bracts imparted an almost uniform whiteness to whole beds. With, or near it, blossomed the Wood Sorrel (*Oxalis acetosella*) with delicately violet-veined petals, and the appropriately-named Gold-thread (*Coptis trifolia*) of evanescent bloom but shining evergreen leaves, and the little Star Flower (*Trientalis americana*) were often also associates. Excepting the pale yellow bells of *Clintonia borealis*, and the purplish tinge, or veining, of the blossoms of several other species, all the plants noticed in bloom at this time upon the mountain bore flowers of some shade of white. The more open ground about our course along the ridge supported a luxuriant and graceful growth of that lovely fern *Aspidium spinulosum*, and with it, in openings about the summit, grew abundantly the Mountain Golden-rod (*Solidago thyrsoides*) which, although yet many weeks from bloom, heralded a royal emblem to light the mountain's brow ere the white locks of winter should again possess it.

At the elevation where these plants first appeared the trees nowhere attained more than a medium stature, those which seemed best to have surmounted the difficulties of their situation, the Balsam and the Paper Birch, never rising to a height of more than, perhaps, twenty-five feet. This growth completely encompassed the range of vision, but an occasional scantiness in the foliage permitted glimpses of surrounding mountains rolling off like huge green billows into the blue distance.

From these evergreens came the leisurely call of the Canada Nuthatch (*Sitta canadensis*), and on closer approach the low, plaintive notes of the little Yellow-bellied Flycatcher (*Empidonax flaviventris*). The brief warble of the Black-and-Yellow Warbler (*Dendroica maculosa*) told of the presence of its unseen author in the surrounding trees, while among the undergrowth the less frequent, but louder and more sustained song of the Mourning Ground-warbler (*Geothlypis philadelphia*) showed that this species, which had been left at the foot of the mountain, had here reappeared. At intervals, faintly mingling with these songs, from some hidden fastness below, came the *fantasia* of the Winter Wren, a melody that seemed to pass from the spirit of unclaimed nature, voicing some mystery of the mountains.

The clamor of a party of Blue Jays occasionally arose and died away in the forest, but here, in this mountain solitude, their screams seemed more subdued than in less primitive regions, and lacked that suggestion of consciousness which individuals constantly within human hearing, seem to acquire. Busily roaming Chickadees (*Parus atricapillus*) at times came about our path, and the Snowbird (*Junco hyemalis*) was present with its simple song. Olive-backed Thrushes (*Hylocichla ustulata swainsoni*) too, were constantly to be heard, and finally, guided by its near song, one was followed up and secured. A moment later another Thrush darted across the path, and disappearing through a young balsam growth, immediately began to sing a few rods off. The song was different from that of the bird which had just been shot, so much so, in fact, as to be remarked even by my guide. It seemed to be more uniform in character, with less variation and definition of the notes; as I wrote in my note-book at the time — more suggestive of the song of *H. fuscescens*. A conspicuous point of difference was that it was more subdued in tone, in fact of a somewhat ventriloquous nature. On examining the bird, in hand, although I had thought myself familiar with all our eastern *Hylocichla*, I must confess to having been puzzled. It was obviously neither the Olive-backed nor the Hermit Thrush, the only species of our own smaller Thrushes which from the distribution of their group (as then understood) could possibly be expected to occur. I at once noted its general resemblance to the Gray-cheeked Thrush, but it seemed impossible that this Hudsonian bird could be found so far south at this season; and though a second specimen pointed more strongly toward it, it was not until I had reached home and made actual comparisons, that I could feel satisfied that its true relationship was with that species. I had long noticed certain somewhat constant differences between examples of *aliciae* occurring at New York on their migrations, and incited by these specimens went carefully over my series of seventeen examples and found them separable into two forms, characterized by slight differences in coloration and a notable difference in size. The examples from the Catskills were more closely allied to the smaller of the two forms, and these, with, subsequently, my entire series, were submitted to Mr. Ridgway, the result being the recognition of a new bird, belonging to our eastern fauna.

But to return to the mountain. It would hardly be justifiable to make a positive statement about a difficult song that had been but once identified, but I feel positive that the Thrushes which were last heard that evening about our camp on the extreme summit of the mountain were of the new form. Night was rapidly falling, and the valleys were in darkness, when one sang several times near the camp, and for some time afterwards a single call-note was occasionally heard, and the varying distance of the sound showed that the birds were still active. Excepting these sounds, the last bird notes heard were those of the Yellow-bellied Flycatcher.

The sharp northwest wind continued late, and the night became clear and cold. Shortly after midnight the bright moon showed the temperature, by a thermometer which I had hung beside the camp, to be  $35^{\circ}$ , and at sunrise it stood at  $32^{\circ}$ . Before daylight I was standing on a boulder of conglomerate on the dim mountain's brow listening for the awakening of the birds. The first songs heard were those of the Hermit Thrush, Snowbird, and Yellow-bellied Flycatcher, which began almost simultaneously, followed a little later by those of the Olive-backed Thrush and the Mourning Warbler, but *H. bicknelli* was not heard, or at least not near enough to be distinguished among the other species.

The increasing light upon the mountain seemed to attract the birds from below, whither, perhaps, they had retired for the night, and soon many different notes were to be heard about the camp; not, however, in that boisterous chorus with which the day is often announced about our homes, in which the notes of many individuals of many species are blended in such confused medley that separate voices are almost indistinguishable, but simply the association of a few vocalists, the very isolation of whose position endowed their voices with an additional interest and charm.

After those already mentioned the Black-poll Warbler (*Dendroica striata*) began its unpretending notes, which always to me suggest a short dotted line, and this song, with that of the Black-and-Yellow Warbler, occasionally alternated about us in agreeable contrast. Now and then a Canada Nuthatch, on its morning tour, tarried to inspect some dead trunk or thinly clothed tree, upon the projecting apex of which, or that of some com-



panion, a solitary Purple Finch occasionally alighted, and with a few wild fugitive notes was gone, to other mountain tops or the forests of the descending slopes.

But to revert to the Thrushes. The two specimens of the new form which were obtained were both males, and were unquestionably breeding,\* though no nest known to belong to their species was found.

It remains to briefly consider some facts furnished by the birds' occurrence as narrated. These facts bear directly on the long contested question of the relationship which *H. aliciae* and *H. swainsoni* bear to one another, and it can scarcely be denied that the present evidence on this point is conclusive. Not only have we representatives of both birds preserving their respective identities at the same locality, under identical conditions of environment, but examples of each taken under these circumstances, display, except in size, even a greater dissimilitude than those which occur together on their migrations. There is but one tenable interpretation of these facts: the birds—*Hylocichla aliciae* and *H. ustulata swainsoni*—are wholly and entirely distinct. Any theory of dichromatism which might be advanced, aside from its extreme unlikelihood, would be shown inadequate by the relative differences in proportions of parts which the two birds exhibit. These differences, as well as those of color are illustrated by the Catskill birds. A specimen of *H. swainsoni* taken at the top of Slide Mountain was in every way typical of its species, and conspicuously unlike the examples of *bicknelli* taken at the same time. Aside from differences in the proportions of parts, the two birds were strikingly different in color, the decided grayish olive tinge of the superior surface of *swainsoni* contrasting strongly with the much darker brownish cast of its congener. One example of the latter instead of showing indications of a buffy tinge about the sides of the head and on the breast, which under the circumstances we should expect to be the case, were it in any way specifically related to *swainsoni*, has absolutely no indications whatever of this shade about the sides of the head, and actually less on the breast than any speci-

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\* Both birds were carefully examined and the evidence on this point was positive and unequivocal. A Thrush's nest containing spotted eggs discovered near the top of Slide Mountain may have been either that of this form or of *swainsoni*, but as positive identification was prevented, further allusion to it is, for the present, withheld.

mens of true *aliciae* that I have seen, and this little most evident low down where the corresponding shade in *swainsoni* begins to pale. It seems probable that this newly recognized race of *aliciae* is responsible for much of the ambiguity which the discussion of both species by different writers has occasioned. Indeed, it seems to occupy the same position relative to *aliciae* proper which, by some, *swainsoni* was supposed to hold, viz., the more southern-born individuals of the species, but that it represents a link specifically connecting the two, the facts already presented refute. As it occurs with true *aliciae* on the autumn migration most specimens of the new form are paler and more brownish in color above, and their general size is nearly that of *swainsoni*.\* and these differences may be regarded by some as approaches towards the latter species. In both species there is a wide individual variation, but the closest approach of each towards the other never exceeds that limit within which each may vary without its specific distinctness being compromised. I have yet to see a specimen of either which would admit of the slightest question as to its identity. I speak thus of adult birds. In such closely related species the young must almost necessarily approximate, and to these we must appeal for light on the things that have been — on the question of origin — whether one has been derived from the other, or both species from a common ancestor. Such obscure insight into this point as I have been permitted seems to indicate that the latter alternative will be found to be the more correct, but, for the present, from lack of the necessary data this important subject is proscribed.

It is unnecessary here to repeat the diagnosis of the new form of *Hylocichla aliciae* given by Mr. Ridgway in the paper before cited. As this writer states, the race breeds “probably in other mountainous districts of the northeastern United States” than the single locality where it was discovered, and it seems very singular that up to the present time we have no knowledge of its occurrence in the summer season elsewhere, even in regions where the two congeneric species with which it was here associating — *H.*

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\* Though averaging of greater length, in proportions this bird averages smaller than *swainsoni*, and some specimens are much smaller than any I have seen of the latter species. The wide difference from true *aliciae* here implied may be illustrated by the following extreme measurements given by the birds of my series:—

<i>aliciae</i> ,	length,	8.00;	extent,	13.12;	wing,	4.35;	tail,	3.40.
<i>bicknelli</i> ,	“	6.55;	“	10.56;	“	3.40;	“	2.60.

*nanus*\* and *H. swainsoni*—are well known to be common summer residents. The occurrence of a representative of *H. aliciae* in the United States at all during its breeding season is a matter of surprise, especially when we recollect the boreal distribution of the typical form during that period, and read† that so far towards the north as the Yukon and the Great Slave Lake it occurs “only as a bird of passage to and from more northern breeding grounds.” Additional information respecting the distribution of the new race will be awaited with great interest.

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## SHORT NOTES ON THE BIRDS OF BAYOU SARA, LOUISIANA.

BY CHARLES WICKLIFFE BECKHAM.

As the avian fauna of the lower Mississippi Valley is now receiving some attention,‡ it seems well that I should contribute my mite of information to the general fund.

Bayou Sara and the adjoining town of St. Francisville, in the parish of West Feliciana, are situated on the east bank of the Mississippi River, 170 miles above New Orleans by that stream and about 80 miles in an air line northwest of it. It is 30 or 40 miles north of Baton Rouge, near which place Dr. Langdon made his observations in April, 1881. The following notes were made principally on and near “Wyoming,” two miles from the river, the plantation of Ex-Gov. R. C. Wickliffe, a place possessing peculiarly agreeable ornithological associations on account of its former owner, Gen. Dawson, having entertained Audubon as his guest for several months. It will be remembered that the type specimen of *Buteo harlani* was captured here.

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\* See “The Coues Check List of North American Birds,” p. 24.

† Birds of North America, p. 12.

‡ Field Notes on Louisiana Birds. By Dr. F. W. Langdon. Journal of the Cincinnati Society of Natural History, July, 1881, pp. 145-155. A List of Birds from the Lower Mississippi Valley, Observed During the Summer of 1881, with Brief Notes. By O. P. Hay. Bull. Nutt. Ornith. Club, Vol. VII, pp. 89-94.

The topography is much more interesting, and is quite different from that farther south and that immediately opposite on the west side of the river. A level plateau, 100 feet above the levee, begins about a quarter of a mile from the river and extends back into the State of Mississippi. This plateau is deeply cut by numerous creeks and ravines, the banks of which are generally densely wooded, with water-oak, sweet gum, cedar, prickly ash, magnolias, etc. All of the level ground on top is in a state of cultivation; cotton being the principal crop. A few miles farther up the high ground does not extend, so near the river, the intervening space being occupied by several small lakes and swamps—a great resort for water birds of all kinds. On account of the high water I did not have an opportunity of visiting this interesting field.

My observations extended only over a period of five days from April 15th to 19th, 1882, inclusive, but a great deal of ground was canvassed in that time; nearly the whole of each day being spent in the field. A good many birds were shot, but few were preserved, as taxidermy was necessarily subordinated to field-work. Dr. Langdon in his interesting paper particularly remarks the absence of the Catbird, Black-and-White Creeper, White-browed Yellow-throat, Kentucky Warbler, Large-billed Water Thrush, and the Redstart, but I found all of these at "Wyoming," together with many others not noted by either him or Mr. Hay, the Catbird and Kentucky Warbler being particularly abundant.

The writer was greatly assisted in his work by Mr. Robert Wederstraudt of "Wyoming," a young man whose unusually close and accurate observations of birds and bird-life rendered his help peculiarly valuable. Many of the following notes are credited to him entirely. I have followed the nomenclature of the Smithsonian list of 1881.

1. *Hylocichla mustelina* (Gm.) Bd. WOOD THRUSH. — Common in woodland, and several seen in the yard near the house.

2. *Merula migratoria* (L.) Sw. and Rich. AMERICAN ROBIN. — Not observed. They appear here in large numbers early in February to feed on the fruit of the "wild peach." and hundreds are shot for the table. They leave early in March.

3. *Mimus polyglottus* (L.) Boie. MOCKINGBIRD. — Very abundant, both in the town about gardens and yards, and in the country. Frequenting open ground exclusively. Four sets of eggs were taken; two perfectly fresh, and two about half incubated. Mr. Wederstraudt called my attention to a curious foraging habit of this bird. We noticed one hopping

along the ground in an open grassy place, pausing at every three or four hops to extend and close its wings. It repeated this several times until a grasshopper was flushed, when the bird immediately "reached" for it, and having captured it, made off to a neighboring bush to eat it. Mr. Wederstraudt says that he has observed this interesting performance many times.

4. *Galeoscoptes carolinensis* (L.) Cab. CATBIRD. — Abundant in the shrubbery in the creek bottoms. None were seen near the dwellings.

5. *Harporhynchus rufus* (L.) Cab. BROWN THRASHER. — Abundant in same places as the last. Three clutches of three eggs each were taken, in one of which incubation was very far advanced, and on the 19th a nest was found containing two young nearly able to fly.

6. *Sialia sialis* (L.) Haldem. BLUEBIRD. — Observed several pairs in town and in the country. Not as common as in Kentucky.

7. *Polioptila caerulea* (L.) Schl. BLUE-GRAY GNATCATCHER. — A common, and, on account of its active and noisy habits, conspicuous bird.

8. *Lophophanes bicolor* (L.) Bp. TUFTED TITMOUSE. — Not very common. Frequenting principally the tops of trees.

9. *Parus carolinensis* Aud. CAROLINA CHICKADEE. — But few observed. A pair bred in a hole in a cedar post within twenty yards of the house last year.

10. *Thryothorus ludovicianus* (Gm.) Bp. CAROLINA WREN. — Very abundant everywhere. A clutch of three eggs was taken on the 19th from a nest in a small recess formed by the junction of several timbers, under the piazza, which was frequented at all times of the day. The nest was empty on the 16th, one egg was deposited on the 17th, one on the 18th, and one on the 19th. I saw neither of the old birds about the place at all, and it was only by capturing the female on the nest at night, that the eggs were positively identified. A pair have bred about this piazza for many years, I am informed.

11. *Mniotilta varia* (L.) V. BLACK-AND-WHITE CREEPER. — A male, the only one seen at all, was captured in a dense wood on the 17th.

12. *Parula americana* (L.) Bp. BLUE-YELLOW-BACKED WARBLER. — Very abundant. A persistent but weak vocalist.

13. *Dendroeca aestiva* (Gm.) Bd. SUMMER YELLOWBIRD. — Common in open places.

14. *Dendroeca blackburniæ* (Gm.) Bd. BLACKBURNIAN WARBLER. — Common in large trees about open ground.

15. *Dendroeca dominica albilora* Bd. WHITE-BROWED-YELLOW-THROATED WARBLER. — A male, the only one seen, was shot out of a magnolia tree on the 10th. In all of my Kentucky specimens of this bird the anterior portion of the superciliary line has a trace of yellow. In this one no yellow is perceptible.

16. *Dendroeca pinus* (Wils.) Bd. PINE-CREEPING WARBLER. — Apparently not uncommon. Preferring open ground. In song.

17. *Siurus auricapillus* (L.) Sw. GOLDEN-CROWNED THRUSH. — One specimen captured in a thicket on the 15th.

18. *Siurus motacilla* (V.) Coes. LARGE-BILLED WATER THRUSH.

—Heard one singing in a densely wooded ravine on the 17th. Mr. Wederstraudt has often seen them in pairs along the smaller water-courses.

19. *Oporornis formosa* (Wils.) Bd. KENTUCKY WARBLER.—One of the most abundant inhabitants of the dense growth along the ravines. Two or three were often heard singing at the same time.

20. *Geothlypis trichas* (L.) Cab. MARYLAND YELLOW-THROAT.—Abundant in the usual places.

21. *Icteria virens* (L.) Bd. YELLOW-BREASTED CHAT.—Very abundant. In full song.

22. *Myiodioides mitratus* (Gm.) Aud. HOODED WARBLER.—Found in same places, and almost as abundant as the Kentucky Warbler. An inhabitant of the undergrowth principally. In song; its note being uttered at intervals of 15 or 20 seconds as it hops from branch to branch in pursuit of insects.

23. *Setophaga ruticilla* (L.) Sw. — REDSTART.—A single specimen, a male, captured in a swamp. It was in company with a female.

24. *Vireosylvia olivacea* (L.) Bp. RED-EYED VIREO.—Very abundant everywhere.

25. *Vireosylvia gilva* (V.) Cass. WARBLING VIREO.—Heard one singing in a shade tree in Bayou Sara on the 15th.

26. *Vireo noveboracensis* (Gm.) Bp. WHITE-EYED VIREO.—Very abundant and voluble everywhere.

27. *Lanius ludovicianus* L. LOGGERHEAD SHRIKE.—Not observed. Mr. Wederstraudt says that they are not uncommon here in the fall. He once saw one kill and devour a small bird in a thorn tree.

28. *Ampelis cedrorum* (V.) Bd. CEDAR WAX-WING.—Observed several small flocks. Said to be very abundant here in winter when numbers are shot for the table. Known here as the "ortolan"—the fourth bird, I believe, embraced under that comprehensive name.

29. *Progne subis* (L.) Bd. PURPLE MARTIN.—Common about Bayou Sara and St. Francisville.

30. *Stelgidopteryx serripennis* (Aud.) Bd. ROUGH-WINGED SWALLOW.—Very abundant. Beginning to breed. Several holes examined but no eggs found. One was shot out of a dead tree.

31. *Pyrrhula æstiva* (L.) V. SUMMER REDBIRD.—Abundant about dwellings and open ground. In song.

32. *Passerculus sandwichensis savanna* (Wils.) Ridgw. SAVANNA SPARROW.—Common in old wet fields. One individual captured, a female, had a very large tumor on the bill and several smaller ones on the toes.

33. *Zonotrichia albicollis* (Gm.) Bp. WHITE-THROATED SPARROW.—Abundant in parties of six or eight in the undergrowth about open places in the low lands.

34. *Peucaea æstivalis illinoensis* Ridgw. OAK-WOODS SPARROW.—Two specimens of this interesting form were taken; both males. One was shot from the top of a small bush near the edge of an old corn field; the other from the top of an isolated pine on the edge of a cotton field.

Both were singing when shot. No others were observed. This, I believe, is the most southeasterly "record" of the form.

35. *Melospiza palustris* (Wils.) Bd. SWAMP SPARROW. — Not uncommon in the usual places.

36. *Pipilo erythrophthalmus* (L.) V. CHEWINK; TOWHEE. — Abundant. Locally known as the "Joree."

37. *Cardinalis virginianus* (Briss.) Bp. CARDINAL GROSBEAK. — Very abundant. Took a set of three fresh eggs on the 17th. Nest as usual.

38. *Passerina cyanea* (L.) Gray. INDIGO BUNTING. — Rather common about open places, but very shy. Not in song.

39. *Passerina ciris* (L.) Gray. PAINTED BUNTING; NONPAREIL. — First seen on the 16th. A male in full song captured on the 19th — the only two seen. Mr. Wederstraudt, who has trapped them, using a captive male as a decoy, says that the same individual is always to be found within a few hundred feet of the place where first observed. I saw several males in confinement in New Orleans, and observed that the red of the underparts was heavily blotched and obscured by yellow, and attributed it to immaturity, but was informed that it was due to the confinement. They are called "Pops" here, the derivation of which name I could not make out.

40. *Agelæus phœniceus* (L.) V. RED-AND-BUFF-SHOULDERED BLACKBIRD. — Abundant in swampy places.

41. *Sturnella magna* (L.) Sw. MEADOW LARK. — Common in old fields. Their note seemed to me to be different from that of the Kentucky bird.

42. *Icterus spurius* (L.) Bp. ORCHARD ORIOLE. — Common about open ground.

43. *Icterus galbula* (L.) Concs. BALTIMORE ORIOLE. — Observed several singing in shade trees in Bayou Sara and St. Francisville.

44. *Quiscalus purpureus* (Bartr.) Licht. PURPLE GRACKLE. — A common Grackle about the river and bayou at Bayou Sara is referred to this form, as the one found forty or fifty miles down the river is according to Dr. Langdon the Purple, and not the Bronzed Grackle.

45. *Corvus frugivorus* Bartr. COMMON CROW. — Common.

46. *Cyanocitta cristata* (L.) Strickl. BLUE JAY. — Common.

47. *Tyrannus carolinensis* (L.) Temm. KINGBIRD; BEE MARTIN. — Common.

48. *Myiarchus crinitus* (L.) Cab. GREAT-CRESTED FLYCATCHER. — A common and conspicuous inhabitant of yards and orchards.

49. *Contopus virens* (L.) Cab. WOOD PEWEE. — Common in dense timber.

50. *Empidonax acadicus* (Gm.) Bd. ACADIAN FLYCATCHER. — Common in same places as last.

51. *Trochilus colubris* L. RUBY-THROATED HUMMINGBIRD. — Very abundant about cultivated ground.

52. *Chaetura pelasgica* (L.) Boie. CHIMNEY SWIFT. — Common.

53. *Antrostomus carolinensis* (Gm.) Gould. CHUCK-WILL'S-WIDOW. — Heard but one, on the night of the 19th, near the house, but I am told that they are quite common.

54. *Chordeiles popetue* (V.) Bd. NIGHT HAWK. — Saw one about dusk on the evening of the 19th, high in air, giving the peculiar call common to the males during the breeding season.

55. *Picus pubescens* L. DOWNY WOODPECKER. — Only two individuals were observed during my visit.

56. *Hylotomus pileatus* (L.) Bd. PILEATED WOODPECKER. — Not observed, but it is said to be common in heavy timber along the borders of the swamp.

57. *Centurus carolinensis* (L.) Bp. RED-BELLIED WOODPECKER. — Rather common. At the time of my departure a pair had begun digging a hole for their nest in a large chince tree within thirty yards of the house.

58. *Melanerpes erythrocephalus* (L.) Sw. RED-HEADED WOODPECKER. — A familiar and common bird here; preferring open to densely wooded country.

59. *Colaptes auratus* (L.) Sw. YELLOW-SHAFTED FLICKER. — Not observed. Mr. Wederstraudt and others pronounce it an abundant bird here.

60. *Ceryle alcyon* (L.) Boie. BELTED KINGFISHER. — Common in open places along Alexander's Creek and its branches. A clutch of six fresh eggs was taken from a hole in a perpendicular bank on the 16th. The orifice was about thirty-five feet from the bottom, and three and a half from the top of the bank. The hole extended horizontally into the bank for a distance of six feet. The old birds circled around a few times after we began digging for the eggs, and then flew off, apparently unconcerned at our operations.

61. *Coccyzus americanus* (L.) Bp. YELLOW-BILLED CUCKOO. — One individual observed on the 19th in a large live oak near the house. In song.

62. *Conurus carolinensis* (L.) Kuhl. CAROLINA PARAKEET. — Not seen by me. Gov. Wickliffe says that twenty years ago it was quite common here at times in large flocks, and Mr. Wederstraudt has several times observed it within the last few years, but never more than two or three together at a time. About eighteen months ago he saw one in an orchard near "Wyoming."

63. *Scops asio* (L.) Bp. LITTLE SCREECH OWL. — Found here, according to Mr. Wederstraudt.

64. *Bubo virginianus* (Gm.) Bp. GREAT-HORNED OWL. — Given as a common inhabitant by Mr. Wederstraudt.

65. *Pandion haliaetus carolinensis* (Gm.) Ridgw. AMERICAN OSPREY; FISH HAWK. — Often seen here, according to the natives.

66. *Haliaetus leucocephalus* (L.) Savig. BALD EAGLE. — Said to occasionally occur here.

67. *Cathartes aura* (L.) Illig. TURKEY BUZZARD. — Common.

68. *Catharista atrata* (Wils.) Less. BLACK VULTURE; CARRION CROW. — Very abundant. I flushed thirty or forty, one day, from the carcass of a dead horse.



69. *Zenaidura carolinensis* (L.) Bp. MOURNING DOVE.—Abundant about open places. I took a clutch of two fresh eggs on the 19th from a nest on a horizontal limb of a water oak, eight feet from the ground.
70. *Ortyx virginianus* (L.) Bp. BOB-WHITE; AMERICAN QUAIL. — Abundant in pairs about cultivated ground. They are not much hunted here as the shooting is very difficult, for when flushed they immediately make for the thickets.
71. *Ardea herodias* L. GREAT BLUE HERON. —One was seen on the 19th flying towards the swamp.
72. *Herodias alba egretta* (Gm.) Ridgw. AMERICAN EGRET. — A flock of eight was observed on the 19th flying towards the swamp.
73. *Butorides virescens* (L.) Bp. GREEN HERON. — A common bird about the creeks and ponds.
74. *Oxyechus vociferus* (L.) Reich. KILLDEER. — Saw a party of eight on the creek. They were very tame.
75. *Philohela minor* (Gm.) Gray. AMERICAN WOODCOCK. — Not observed. Said to be common here in the fall, when they are hunted in the cotton fields at night with torches.
76. *Gallinago media wilsoni* (Temm.) Ridgw. WILSON'S SNIPE. — Not observed, but said to be common here in early spring.
77. *Rhyacophilus solitarius* (Wils.) Cass. SOLITARY SANDPIPER. — Two individuals were several times noted about a pond of stagnant water.
78. *Tringoides macularius* (L.) Gray. SPOTTED SANDPIPER. — Several times observed along the creeks.
76. *Rallus elegans* Aud. RED-BREASTED RAIL. — One several times seen in a small pond thickly overgrown with small trees, water-lillies etc.
80. *Rallus virginianus* L. VIRGINIA RAIL. — One seen in same place as the last. Both eluded capture.
81. *Fulica americana* Gm. AMERICAN COOT. — Not observed, but said to be common here in fall and early spring. Known here by the Creole name of "Poulet Dean."
82. *Anas boschas* L. MALLARD. — Not observed, but it is said to be common here during the migrations.
83. *Querquedula discors* (L.) Steph. BLUE-WINGED TEAL. — Two were shot out of a flock of eight on the 16th on Alexander's Creek.
84. *Aix sponsa* (L.) Boie. WOOD-DUCK; SUMMER DUCK. — Not observed, but common in the swamp, I am informed.
85. *Pelecanus fuscus* L. BROWN PELICAN. — Said to breed in the lakes above Bayou Sara.
86. *Podilymbus podiceps* (L.) Lawr. THICK-BILLED GREBE. — Not observed, but well known here.

# LIST OF BIRDS OBSERVED AT HOUSTON, HARRIS CO., TEXAS, AND IN THE COUNTIES MONTGOMERY, GALVESTON AND FORD BEND.

BY H. NEHRLING.

(Continued from p. 13.)

87. *Molothrus ater* Gray. COWBIRD. — Very abundant throughout the year. They come in large flocks into the streets of the city in the winter months to search for food; they also associate at that season with *Scolecophagus cyanocephalus* Cab. I have never seen anywhere else such numbers of these birds as here, and in the breeding season most of the nests of our small birds contain eggs of this parasite.

87a. *Molothrus ater obscurus* Coues. DWARF COWBIRD. — A common bird during the breeding season. It is smaller than its near relative, and quicker in its motions. Moves usually in flocks of from two to ten. I first observed the bird when it was just leaving the nest of *Lanivireo flavifrons* Bd., and found its egg in it, besides four of the Vireo's. The egg is smaller and not so thickly sprinkled as that of the common Cowbird.

88. *Xanthocephalus icterocephalus* Bd. YELLOW-HEADED BLACKBIRD. — Very common in marshy localities from the latter part of October to March and April. I think some remain to breed, as I observed small flocks during May in the low prairie districts overgrown with reeds and other water plants. The best opportunity I ever had to study the breeding habits of this beautiful but very locally distributed Blackbird was in the Calumet Marshes near Kensington, about eighteen miles south of Chicago, where I discovered in a single day about fifty nests among the reeds. During the winter months they associate with *Molothrus ater*, *Agelæus phœniceus*, and *Scolecophagus cyanocephalus*; many migrate further south, and in cold winters only a few remain near Houston.

89. *Agelæus phœniceus* Vieill. RED-WINGED BLACKBIRD. — Common in swamps, but not so abundant as I have found these birds to be in Wisconsin and Illinois. May 6, 1881, I discovered a nest in a somewhat strange position, in a blackberry-bush (*Rubus villosus*) on the edge of a thicket; there was no swamp within a mile. This was in the northern part of Harris County. Only a few remain to winter, the greater part migrating farther south.

90. *Sturnella magna* Swains. MEADOW LARK. — Common summer sojourner, and very abundant during winter; many thousands are killed in the latter season by pot-hunters. During summer the Meadow Lark is strictly a prairie bird, always to be looked for on the open grassy savannas;

I never found the bird breeding in a cotton field or corn field. In winter, however, they change their habits, and in large flocks visit the sugar-cane, cotton, and corn fields.

91. *Icterus spurius* Bp. ORCHARD ORIOLE. — Common during migrations.

91a. *Icterus spurius affinis* Coues. SOUTHERN ORCHARD ORIOLE. — Very common summer sojourner; breeds in all suitable localities, especially in peach gardens. The bird is decidedly smaller than the northern variety; it is also more active and quicker in its motions. The song is much more varied, and louder, quicker and more beautiful, reminding one of the song of the Baltimore Oriole. The nest is smaller, but it is built of the same materials—green grasses, lined with cotton. May 8. 1881. I discovered a very curious but not quite finished nest near Spring Creek, only a few yards from a dwelling. For several days I had observed a pair of these birds carrying fresh green grasses to a laurel oak (*Quercus imbricaria*), that was densely covered with large hanging bunches of Spanish moss (*Tillandsia usneoides*); they disappeared every time into a bunch of moss, yet I could see no nest. At last, on taking down the bunch of moss, I was surprised to find a beautiful structure in my hands. The grasses and moss were all woven firmly together; the entrance was on the side.

92. *Scolecophagus ferrugineus* Swains. RUSTY BLACKBIRD. — Very rare. A few seen in March, 1881, among flocks of the following species.

93. *Scolecophagus cyanocephalus* Cab. BREWER'S BLACKBIRD. — During winter the most common of the family *Icteridæ*. They are very abundant in Houston from the early part of November to April, when they disappear for the north; by the end of that month only a few remain to breed in suitable localities. I found several nests May 5, 1881, in thick, small oaks near the Rose Hill Post Office in the northern part of Harris County. They were built in the tops of young post oaks (*Quercus obtusiloba*), about twelve to fifteen feet from the ground, and contained from two to five eggs each. The nests were composed exteriorly of strong slender plant stems and coarse grasses, and were lined with fine grasses. These birds are very unsuspicious and bold during winter, running about in even the most crowded city streets, and also frequenting door-yards. On cold days they are easily caught. I had a pair over a year in a cage; they soon became reconciled to confinement, and were lively, interesting pets.

94. *Quiscalus purpureus æneus* Ridgw. BRONZED GRAKLE. — The most abundant of all the Blackbirds during the breeding season, arriving from their more southern winter quarters early in March. None remain, so far as my observations go, during winter. They breed abundantly in the larger gardens of Houston, especially in the mountain cedars (*Juniperus occidentalis texana*), and the live and water oaks (*Quercus virens* et *Q. aquatica*). In the thick young oak grove near Rose Hill Post Office I found a large colony of about two hundred pairs breeding and in their company also the Boat-tailed Grakles (*Quiscalus major*) and Brewer's Blackbirds (*Scolecophagus cyanocephalus*), but each species had its own

limited nesting range. Every nest was built in the top of a slender oak and all the nests examined were neat, strong, and large structures; they were constructed of plant stems, slender grasses, fragments of corn-husks, intermingled with sheep's wool, and lined with finer grasses. In some nests a layer of mud was also to be found.

95. *Quiscalus major* Vieill. BOAT-TAILED GRAKLE. — Quite regularly distributed over the coast region of Texas. I found the birds breeding in the colonies of the Little Blue Heron (*Florida cærulea*) and the Snowy Heron (*Garzetta candidissima*), on the button bushes (*Cephalanthus occidentalis*) standing in the water. May 6, 1881, I observed a colony of about twenty pairs near Rose Hill Post Office. They were all busily engaged in building their nests in the tops of young oaks. Only a few nests were finished, and only one contained eggs, four in number. Nest composed of weed stalks, grasses and sheep's wool, lined with finer grasses; cavity very shallow if compared with nests of *Quiscalus purpureus æneus* and *Scolecophagus cyanocephalus*. The male has a few very fine song-like notes, different from those of every other Blackbird.

96. *Corvus frugivorus* Bartr. COMMON CROW. — In winter numbers are to be observed on Galveston Bay, near bayous, and on the sugar cane fields near the Brazos. In spring they scatter over the country, breeding in all suitable localities, but they are then nowhere common in the coast region.

97. *Cyanocitta cristata* Strickl. BLUE JAY. — A very common resident; breeds abundantly in all woody localities; also often in gardens on mountain cedars and sometimes on the beautiful Japan medlars (*Eriobotrya japonica*). Very bold and tame when well treated, coming then into door-yards and even into houses.

98. *Milvulus forficatus* Sw. SCISSOR-TAILED FLYCATCHER; "TEXAN BIRD OF PARADISE"; "FORK-TAIL." — Very common summer sojourner; breeds frequently in the "bosquets" on the prairies, on the borders of woods, on isolated trees in the fields, and even in gardens. As the nest in this part of Texas is in most cases placed in trees, densely covered with *Tillandsia*, it is almost impossible to discover it. These beautiful birds are not at all retiring in their habits; in many instances they are so tame as to breed in close proximity to dwellings. They arrive from their winter quarters late in March, sometimes in the first days of April. Very often two broods are raised yearly. I found fresh eggs as late as July 4. The nests in the coast region are built partly of grasses but especially of gray Spanish moss. In September, after the breeding season, they gather in large flocks, visiting the cotton fields, where multitudes of cotton worms (*Aletia argillacea*) and their moths abound, on which they, with many other small birds, eagerly feed; early in October they depart for the South.

99. *Tyrannus carolinensis* Temm. KINGBIRD. — Common summer resident. Arrives from the South late in March or early in April, when the beautiful native yellow jessamine (*Gelsemium sempervirens*) fills the air with its pleasant odor. Nests commonly in the honey locust (*Gledit-*

*schia triacanthos*) and also in the common locust (*Robinia pseudacacia*). In many cases two broods are raised yearly.

100. **Myiarchus crinitus** Cab. GREAT-CRESTED FLYCATCHER.—Common summer sojourner, even in Houston, where it sometimes breeds in bird boxes, but more commonly in knot-holes of the cedar and sycamore (*Platanus occidentalis*) and in old Woodpeckers' holes. Their loud whistling cries are almost always to be heard from early April till the latter part of August; departs for winter quarters early in October. It is not a shy bird, but knows well how to escape danger. They are, with Kingbirds and other species, very busy during the time the *Magnolia grandiflora* is in bloom, about which millions of various insects abound.

101. **Sayornis fuscus** Bd. PHOEBE BIRD; PEWEE.—Common in winter, from December to March, especially in the gardens of Houston. The common notes I heard were quite different from their familiar *pewee*, sounding like *tsip, tsip, tsip, zewee*. None remain to breed.

102. **Sayornis sayus** Brd. SAY'S PEWEE.—This Pewee I have observed only in April, on the borders of thickets and in the shrubbery near woods, and always singly.

103. **Contopus virens** Cab. WOOD PEWEE.—Common summer sojourner in open woods, particularly in the "post oak," where its loud characteristic notes can be heard throughout the summer. Although this bird is common, I did not succeed in finding a nest. Arrives early in April; departs early in October.

104. **Empidonax acadicus** Bd. ACADIAN FLYCATCHER.—Common summer resident, and the only one of this attractive genus that breeds in this part of Texas. They are common in all the woods, particularly where a beautiful light green lichen (*Usnea barbata*) hangs from the trees. In all the deciduous woods of Harris County, and also in the mixed bottom woods near Spring Creek, they are common, but I was not so fortunate as to discover the nest, although I always kept a diligent lookout for it.

105. **Empidonax trailli** Bd. TRAILL'S FLYCATCHER.—Common during migrations, but none, I think, remain to breed.

106. **Empidonax minimus** Bd. LEAST FLYCATCHER.—Common during migrations in April and October.

107. **Trochilus colubris** Linn. RUBY-THROATED HUMMINGBIRD.—Very common summer sojourner. I observed them from early April to the middle of October. Very abundant when the *Wistaria chinensis*, *Lonicera japonica*, *Gardenia florida*, *Pittosporum tobira*, *Cydonia japonica*, etc., are in flower.

I have several times seen another species of Hummingbird, but I did not succeed in securing it.

108. **Chætura pelagica** Bd. CHIMNEY SWIFT.—On August 20, 1880, I saw numbers on the borders of woods near Spring Creek. During May, June and July I have seen only a few pairs.

109. **Antrostomus carolinensis** Gld. CHUCK-WILL'S-WIDOW.—Common during the breeding season in dry woods, with much undergrowth. Arrives late in April from its winter quarters; the time of departure I do

not know. They remain silent during daytime, and commence their peculiar cries soon after dusk of evening. The eggs are laid on the bare ground in dry places, and are commonly well hidden by thick shrubbery. In the dry woods near Spring Creek they are common, but not in the wet wooded tracts near Houston.

110. *Chordiles popetue* Bd. NIGHTHAWK. — Seen in very large numbers. I saw thousands during a cloudy, rainy day in the early part of May, near the borders of woods. They all soon disappeared.

111. *Chordiles acutipennis texensis* Ridgw. TEXAN NIGHTHAWK. — A regular but somewhat rare summer sojourner. Differs from the preceding in many respects. They are more retiring in their habits; they also sail very low over ponds and pools of water, where myriads of insects, especially mosquitoes, abound. Four to six are often seen together, flying quite near each other. I never heard them utter a sound, and do not know where they breed, but I think they have their nests on the shrubby borders of woods, where they are most commonly to be observed when flying. They are readily distinguishable from their near relatives, our familiar northern Nighthawk, by their peculiar, low, and quiet sailing, and also by their smaller size.

112. *Campephilus principalis* Gray. IVORY-BILLED WOODPECKER. — Very rare; I have found it only in the large and dense pine forests in the northern part of Harris County and in Montgomery County far from human habitations. Very shy and not easy to approach.

113. *Picus villosus* Linn. HAIRY WOODPECKER. — Frequently seen during winter, but only a few times during the breeding season.

114. *Picus scalaris* Wagl. TEXAS WOODPECKER. — This beautiful little Woodpecker is quite numerous in all wooded districts; it comes often during winter into the gardens of Houston, and is then very unsuspicious. I can give no particulars about its nesting habits, as I have never found a nest.

115. *Picus pubescens* Linn. DOWNY WOODPECKER. — Common; breeds in all wooded districts, but is by no means so abundant as I have found it to be in Wisconsin.

116. *Picus borealis* Vieill. RED-COCKADED WOODPECKER. — The *Picus querulus* of Wilson is resident in all the large pine woods; it is very shy, restless, and noisy. The male is very wary during the breeding season, and every pair has its own limited breeding range. I discovered a nest in an old high pine stump, but it was out of reach. These birds are not rare in heavily wooded districts. I never have seen one in the deciduous woods.

117. *Sphyrapicus varius* Bd. YELLOW-BELLIED WOODPECKER. — Winter resident from November to March, and then not uncommon. Always seen singly.

118. *Hylotomus pileatus* Bd. PILEATED WOODPECKER. — Common resident in all the wooded tracts, in the "post oak" as well as in the bottom and pine forests. A very noisy species; its drumming is almost as loud as that of the Ivory-billed Woodpecker. It is not a shy and retiring

species, but, on the contrary, is very often seen near farm houses. Especially abundant where during the previous winter or spring many trees have been cut down; these they search for worms, and very soon have all the bark hammered away from them. They often excavate a hole for their nest in a post oak, in a sycamore, and also in elms, often at a considerable height. The cavity is from 10 to 20 inches deep and so large that a man can easily put his hand into it. The eggs, from four to six, are of a brilliant white color. Only one brood is raised, and the young follow their parents till late in the fall.

119. *Centurus carolinus* Bonap. RED-BELLIED WOODPECKER. — Another very common Woodpecker. Its loud, harsh croaks, sounding like *crirrk*, are almost continually to be heard in the woods. Prefers deciduous woods. It is resident throughout the year, and is not shy or of retiring habits, but often visits the larger gardens. In the winter months I have often observed them on the ground searching for insects, but it can not walk as easily as *Colaptes auratus*. Breeds usually on the borders of woods, and raises only one brood yearly.

120. *Melanerpes erythrocephalus* Sw. RED-HEADED WOODPECKER. — The most abundant of its family in and near Houston; breeds commonly in the city in sycamores, water and swamp oaks, and in magnolias along Buffalo Bayou. Very confiding and tame; hammers often on houses and stables, on church towers, telegraph posts, etc. Two broods are raised each season. I have seen, late in August, young just from the nest. Once I discovered the nest in a sycamore in a street, about fifteen feet from the ground, the tree standing only a few yards from a house. Resident throughout the year. Many are killed by negro boys with so-called "nigger-shooters," and not only this species, but also numberless other birds are thus destroyed by them.

121. *Colaptes auratus* Sw. GOLDEN-WINGED WOODPECKER; "FLICKER." — Rare during the breeding season, abundant in the winter months. Frequently seen in pairs and small companies of from four to ten, and even more. Spends its time during this season mostly on the ground, where it searches for food. The first companies arrive late in October, and they steadily increase in numbers till December, when they are exceedingly abundant. They begin to migrate northward late in February.

122. *Ceryle alcyon* Boie. BELTED KINGFISHER. — Seen only occasionally. In the western part of Texas, where the rivers and creeks have clear water, the bird is evidently more common.

123. *Coccyzus americanus* Bonap. YELLOW-BILLED CUCKOO. — Common summer sojourner; breeds abundantly in the thickets on the edges of woods, and is in this part of our country a very unsuspicious bird, as it is not only often seen in gardens, but sometimes breeds in them, in pomegranate bushes, in *Banksia* and Cherokee-rose thickets, etc. The first nests I found late in April, the last, July 5. This, a typical nest for this region, was placed in a young sweet-gum tree (*Liquidambar styraciflua*), about ten feet above the ground, and was almost hidden among *Smilax laurifolia*, with which the tree was overgrown. It was built of

sticks, fragments of leaves, Spanish moss and a few grass-stems lined with the leaves of the loblolly pine (*Pinus taeda*). It contained two eggs, one somewhat advanced in incubation, the other quite fresh. I think two broods are, in many cases, reared each season.

124. *Coccyzus erythrophthalmus* Bd. BLACK-BILLED CUCKOO.—Common during the middle of April, but I do not think that any remain to breed.

125. *Strix flammea americana* Coues. AMERICAN BARN OWL.—More or less common in all suitable localities. Breeds usually in hollow stumps, but last year (May 6, 1881) I discovered a nest in the side of a high bank of a "gully" near Spring Creek. The nest was about two feet from the entrance and nearly horizontal; a few feathers were the only lining. Eggs, three in number, dirty white.

126. *Brachyotus palustris* Gld. SHORT-EARED OWL.—Not uncommon late in autumn and during winter near thickets and marshes, where many little birds associate, on which it feeds almost entirely. Very shy, and not easily secured.

127. *Syrnium nebulosum* Gray. BARRED OWL; "HOOT OWL"; "BOTTOM OWL."—Very common, especially in all the bottom woods and in the thick woods bordering Buffalo Bayou. Their curious notes are heard every night from the dusk of evening till dawn, and also in dark cloudy and rainy days. These notes are easily imitated, and often three or four of the birds may be thus attracted. During night time they come fearlessly near farm houses, and, with their loud, laughing, unearthly sounds, make a terrible noise. I have often heard four or five at one time near a house. Their flight is easy and quick. In Texas where the hens, turkeys, etc., roost on trees, this Owl is very destructive. They do not kill old poultry, but like half-grown chickens, and soon depopulate a whole poultry-yard. The nest is usually built high up in trees, mostly in pin oaks (*Quercus palustris*) and elms, sometimes also in pines, of strong twigs and sticks, without a lining. They also use old Crow's and Hawk's nests, which they repair a little.

128. *Scops asio maccalli* Ridgw. TEXAN SCREECH OWL.—This little Owl seems to be quite common. If they are disturbed, they hide in the hollow of a tree or stump. All their movements are exceedingly quick and elegant, and the flight gliding and noiseless. I have never had an opportunity to examine a nest.

129. *Bubo virginianus* Bonap. GREAT HORNED OWL.—Common; resident; breeds. Nests abundantly in all the large woods; especially common in dense bottom woods. Their loud cries are to be heard not only during the nights, but also in the day time, when the weather is cloudy and rainy. They are very destructive to the poultry; they, like the Barred Owls, come near the farm houses and commence their ludicrous cries about nine o'clock in the evening; they utter their cries only during the breeding season; later they are almost silent. The flight is very quick and easy. The nest is placed from thirty to seventy feet from the ground in the top of a large forest tree; it is composed of sticks and



twigs, and is sometimes lined with a bunch of Spanish moss, but this may be accidental.

130. *Speotyto cunicularia hypogæa* Ridgw. BURROWING OWL.—This little Owl is every year increasing in numbers. Breeds in the higher prairies, and also in waste fields, in holes. They also breed in the burrows of the salamander, a species of *Geomys*, probably *Geomys pinetis*. I have not seen their eggs.

131. *Falco mexicanus polyagrus* Coues. PRAIRIE FALCON.—This noble bird is resident on the borders of woods near prairies, but it is by no means a common bird. Its flight is graceful, but always low; its food is said to consist especially of Prairie Chickens and domestic fowl.

132. *Æsalon columbarius* Kaup. PIGEON HAWK.—Common in fall and winter, as soon as the large flocks of Blackbirds and different Finches appear from the north, among which it makes great havoc. None remain to breed. They disappear quite early, usually in the first days of March.

133. *Tinnunculus sparverius* Vieill. SPARROW HAWK.—Common in fall and winter, but never observed during the breeding season. This bird also does great harm among our small birds.

134. *Polyborus cheriway* Cab. CARACARA EAGLE; MEXICAN EAGLE; "MEXICAN BUZZARD."—Regularly distributed, but in this part of Texas is not so common as farther in the interior. It is a very showy bird, and the flight is extremely elegant and quick. Although it is very shy and not easily to be approached, it often builds its nest in trees not far from farm houses. The farmers say they are as harmless as Turkey Buzzards. The nest is usually from twenty-five to thirty feet above the ground and is built of sticks, sometimes lined with bits of cotton and Spanish moss; the cavity is shallow. Often the birds, commonly single individuals, are to be observed with Vultures feeding together on carrion.

135. *Elanoides forficatus* Ridgw. SWALLOW-TAILED KITE; FORK-TAILED KITE.—Abundant summer sojourner from the first part of March to October. A beautiful bird, and one of the most characteristic species of this locality. Especially abundant in the bottom woods near prairies or fields. Nest very high in slender trees in the river and creek bottoms; it is built of sticks and Spanish moss. I never had an opportunity to collect eggs of this bird as the nests, in almost every case, were out of reach. In August and September the birds are often seen in cotton fields, where they feed on cotton worms and other insects. They are particularly fond of small snakes, such as *Leptophis*, *Rhinostoma coccinea*, lizards (*Anolis carolinensis* and *Ameiva sex-lineata*). I never have seen them take a bird or a small quadruped.

136. *Elanus glaucus* Coues. WHITE-TAILED KITE.—This rare and beautiful bird I have seen several times sailing over cotton fields. Its flight is easy and graceful, but not rapid; sometimes it stops a few moments and then descends with great velocity to the ground to capture a lizard or a snake. It is not shy, and is easily recognized by its white tail.

137. *Ictinia subcærulea* Coues. MISSISSIPPI KITE.—Not a common summer resident, and very shy and retiring in its habits. It is generally

found in the same localities with *Elanoides forficatus*. Its sailings are extremely beautiful and sometimes the bird is so high in the air as to be almost invisible. Like the Swallow-tailed Kite, it is often seen about cotton fields, where it feeds on the cotton worms and on small snakes and lizards. I have a few times seen the nest high up in the top of gigantic pines, pin oaks and sycamores, entirely out of my reach.

138. *Circus hudsonius Vieill.* MARSH HAWK.—Common resident in the marshy prairies in the northern part of Harris County; also common near the sugar-cane fields on the Brazos. It is very destructive to all the smaller prairie birds, but it also feeds on snakes, frogs and lizards. I never found a nest.

139. *Accipiter cooperi Bonap.* COOPER'S HAWK.—This very common and impudent robber is the most destructive of the Raptores to the barnyard fowls; in a short time all the young chickens, turkeys, and ducks are killed by it. It is so bold as to seize the poultry before the farmer's eyes, and in only few cases can the bird be punished, as it is very difficult to shoot. The flight is easy, very quick, and usually low. Nests found in April had already half-grown young. They were similar to Crows' nests, built of twigs in the tops of middle sized trees, and lined with bunches of *Tillandsia*.

140. *Accipiter fuscus Bonap.* SHARP-SHINNED HAWK.—Common in winter.

141. *Buteo pennsylvanicus Bonap.* BROAD-WINGED HAWK.—Not uncommon during the winter months, and a few remain to breed, nesting in the high trees near the rivers and creeks.

142. *Buteo swainsoni Bonap.* SWAINSON'S HAWK.—Not uncommon during the breeding season; often seen on the prairies near woods. Many are killed, as they commit great havoc among the poultry. The nest is built in the tallest trees, in an almost inaccessible position.

143. *Haliaeetus leucocephalus Savig.* BALD EAGLE; WHITE-HEADED EAGLE.—This is not a common bird, but is known to breed in certain parts of this region. They build their nests in the tallest trees of the river bottoms. Two young, taken out of a nest in the spring of 1880, became very tame pets.

144. *Cathartes aura Illig.* TURKEY BUZZARD.—Very abundant, and resident throughout the year. Nests on the ground.

145. *Catharista atrata Less.* BLACK VULTURE; CARRION CROW.—Common but not abundant; about one-twentieth as common as the Turkey Buzzard. Breeds on the ground in the grassy prairies.

146. *Ectopistes migratoria Sw.* PASSENGER PIGEON.—Occasionally common during the migrations. In September and October, 1881, I saw immense numbers in the post oak woods, where they were feeding on acorns.

147. *Zenaidura carolinensis Bonap.* MOURNING DOVE.—Very abundant, and resident throughout the year. In very cold winters many migrate farther south. They raise, at least in this part of the country, three broods yearly. On the prairies the nest is not unfrequently placed upon the ground.

148. *Chamæpelia passerina* Sw. GROUND DOVE. — A rare summer sojourner. Have never seen more than two together.

149. *Meleagris gallopavo (americana Coues?)*. WILD TURKEY. — I can not state with certainty whether the Wild Turkey under consideration is the *Meleagris gallopavo americana* or *M. gallopavo*, but I think it is the first named variety. I have found the bird abundant in all the heavily wooded districts, especially common in the thick woods with much underbrush near Spring Creek. Eggs are often put under a tame hen, but the young are not easily domesticated; as soon as they are grown they become very wild, and many go off again to their favorite woods. Early in May I have seen the mother bird with about a dozen young ones, but they were so extremely wild that they suddenly disappeared among the almost impenetrable thickets of blackberries (*Rubus villosus*) and Smilax (*Smilax laurifolia* and *S. lanceolata*). When the pecans are ripe, they assemble in flocks of from ten to twenty and even thirty, and feed particularly on these nuts. Later in the season they feed on several kinds of acorns, and in winter when food becomes scarce, they eat the berries of the myrtle-holly (*Oreophila myrtifolia*) and other berries.

150. *Cupidonia cupido* Bd. PRAIRIE HEN. — Common resident on all the flat grassy prairies. Is becoming scarcer every year.

151. *Ortyx virginiana* Bonap. AMERICAN QUAIL; "BOB-WHITE." — Very abundant resident. Two broods are raised yearly. They are exceedingly tame and confiding, breeding sometimes in close proximity to the habitations of men. In winter from fifty to one hundred are usually seen in cotton and sugar-cane fields.

(To be continued.)

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## Recent Literature.

BAILEY'S INDEX TO FOREST AND STREAM.\* — The newspaper thus indexed as to the bird-matter contained in its first twelve volumes has always given much space to ornithological articles, which have become of late years more valuable from a scientific standpoint than newspaper pieces generally are, being authenticated by the signatures of the writers instead of some silly pen-name, and being on the whole scarcely below or not below the grade of the bird-notes that one finds in periodicals of professed technical character. No one who has had any experience in hunting for what he wants through the scantily indexed pages of a weekly issue can

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\* "Forest and Stream" Bird Notes. An index and summary of all the ornithological matter contained in "Forest and Stream," Vols. I-XII. Compiled by H. B. Bailey. New York: F. & S. Pub. Co., 39 Park Row. 1881. 8vo., paper, pp. iv, 195.

fail to appreciate the good office Mr. Bailey has rendered us all; and every one upon whom the bibliographical blight has descended knows what an immense amount of industry that curse entails. The author has our hearty sympathy in the latter, and our best thanks for the former. His work is more than a mere alphabetical list of names, followed by reference figures; for it includes, as the title says, a summary of each article indexed — often giving just the points wanted, thus rendering it unnecessary to look up the reference. The Index also includes authors' names, and among these the authorship of many pseudonyms and initial-signatures are for the first time properly exposed. The summation of the bird-matters seems to be quite complete, and is certainly extensive, in the cases of some common game birds occupying several pages. We presume the work is not free from faults and errors of all sorts, because nothing of the kind can be; but we have found it more reliable than its mechanical execution would lead one to expect. Considering how great a favor Mr. Bailey has conferred upon the publishers, and how much good his Index will do the paper, by "setting it up" in the estimation of working ornithologists higher even than it was before, his work might have been better dressed. — E. C.

CHAMBERLAIN'S CATALOGUE OF THE BIRDS OF NEW BRUNSWICK.\*—As many of our readers are doubtless aware, Mr. Montague Chamberlain has been engaged, for some time past, in investigating the bird fauna of New Brunswick, and an interesting result of his labors is now before us in the form of a catalogue of the birds of that Province. This paper, which forms by far the most important one in the publication of which it is a part, comprises some forty-three pages which are divided into two sections; "Section A" being restricted to species which occur in St. John and King's Counties"; while "Section B" embraces "species which have not been observed in Saint John or King's Counties but which occur in other parts of the Province."

The former division treats of a region to which the author has evidently paid special attention, and the text, being mainly based on his personal observations or investigations, includes many interesting and several important notes and records. From these we gather that the rather marked Alleghanian tinge which is known to pervade the bird-fauna of the entire coast region of Maine, as far as Eastport and Calais, extends still further eastward. Thus the Catbird, White-eyed Vireo, Towhee Bunting, Cowbird, Meadow Lark, Baltimore Oriole, Carolina Dove, Least Bittern, Florida Gallinule, and a few others scarcely less characteristic of the more southern fauna, have been found within the area treated by the present paper, but all are marked as rare, and the greater number as merely accidental visitors. Many of the more important records have already been published elsewhere.

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\* A Catalogue of the Birds of New Brunswick, with brief notes relating to their migrations, breeding, relative abundance, etc. By Montague Chamberlain. Bulletin of the Natural History Society of New Brunswick. No. 1, pp. 23-68. Published by the Society. Saint John, N. B., 1882.

The annotations in this section are often full and always interesting. The author writes clearly and simply and his style is characterized by a modest frankness that is very attractive. We fear, however, that some of his views respecting the distribution of races are hardly orthodox. Thus he thinks that "two races of Loon spend the summer in New Brunswick, and breed here. They have plumage of similar colors and markings, but one is smaller than the other, being some six inches less in length. The larger bird is common on the lakes and rivers in all sections of the Province, seldom seeking the salt water until the rivers freeze over, while the smaller is rarely found away from the sea shore"; and again that a light form of the Ruffed Grouse "resembling the descriptions given of *umbelloides*" occurs with typical *umbellus* and that it is "not improbable that both the Brown and Gray varieties are represented here, with numerous hybrids"; a condition of affairs which, if true, is certainly deplorable.

"Section B" is almost wholly compiled, the authorities mainly drawn on being Boardman, Herrick, and Dr. A. Leith Adams. Several of the records left by the latter writer are, in the light of our present knowledge, of very doubtful value.

Mr. Chamberlain's work, so far as it has gone, has evidently been done carefully and well, a fact which makes it the more to be regretted that the publication of his report could not have been longer delayed, for in many respects it lacks the completeness that is desirable in a paper of its kind. Any adequate exploration of a region so extensive as that embraced within the limits of New Brunswick cannot be accomplished in one or two seasons only. It is rather the task of a lifetime. But we must bear in mind that the present "Catalogue" is offered simply as a "starting point," to be "supplemented by additions and revisions as opportunity for further investigation occurs"; and considered from this standpoint it is in every way a highly creditable production. That its author is qualified to carry out an undertaking which he has so satisfactorily begun can be a matter admitting of no doubt, and we shall look for many interesting developments in the field which he has chosen.—W. B.

KRUKENBERG ON THE COLORING MATTER OF FEATHERS. SECOND PART.\*—Turacoverdin, a green pigment which occurs in the green feathers of the *Musophagidæ* is first considered. This pigment is soluble in alkalis, such as soda and the like, but is insoluble in acids, chloroform, ether and the alcohols. Concentrated sulphuric acid added to the pigment in solution turns it violet red. Turacoverdin in solution emits a weak red fluorescent light, and when examined by the spectroscope shows an absorption band near D. It contains a considerable quantity of iron, but little copper or manganese, and probably, like Turacin, lacks sulphur and nitrogen. A point of considerable interest is its identity with a green

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\* Dr. C. Fr. Krukenberg. Die Farbstoffe der Federn. 2 Mittheilung, in Dessen Verg.-phys. Stud., 2 R., I. Abth., 1882, SS 151-171.

pigment procured by Church by boiling a solution of Turacin for a long time.

Zoörubin, a red-brown pigment occurring in *Cinnurus regius* is next described. In solubility it much resembles the preceding, but has no absorption band, though all of the spectrum beyond D is absorbed. When treated with a very small quantity of copper-sulphate, Zoörubin instantly becomes cherry-red, a characteristic reaction. This pigment occurs in the brown female paradise bird though not in other brown birds, as *Strix flammea* and *Alcedo ispida*. As regards the colors of *Eclectus polychlorus*, where green, blue, red, yellow and brown may all be found, the author has brought out some very interesting points. The blue and green are mechanical, or rather the blue is mechanical and the green is the result of a yellow pigment overlying a brown one. The true pigments of the feathers are brown, yellow, and red. If the feathers be blackened on their under surfaces with lampblack or sepia, they become blue. If the yellow feathers are treated in a similar way, they become green. The yellow pigment is Zoöfulvin, the red probably Zoönerythrin.

Lastly the author describes the yellow pigment, Coriosulfurin, found in the tarsus of the birds of prey. This substance is unlike any known to occur in feathers. It has three absorption bands between F and G.—J. A. J.

STEJNEGER'S NOMENCLATURAL INNOVATIONS.\*—Proposing to use "the oldest available name in every case," the author shows that many of our current names must give way if the "inflexible law of priority" is to be observed. For ourselves, we believe that the surest way out of the nomenclatural difficulties that beset us is to be found in some such simple rule as this, and that to upset every name that can be upset according to any recognized principle is really the shortest road to that fixity of nomenclature for which we now all sigh like furnaces. Still such a paper as this makes us wish, as so many others have done, that some counteractive "statute of limitation" could come into operation, by which a bird resting in undisturbed enjoyment of its name for, say, a century or half a century, should not be liable to eviction under the common law of priority. Human welfare and happiness on the whole is the final cause of all law, and in the case of titles to real estate it is we believe statutory that undisturbed possession for a certain period shall exempt property-holders from litigation on account of any adverse claim, however otherwise sound, which is not presented within a certain number of years. This seems to be necessary for the security of any title, and to proceed upon the theory that if owners don't take the trouble to make good their title in due time they ought to forfeit it. The logic of a bird's right to its name and a possessor's right to any other property is the same in theory, and might properly be carried into effect. Fifty years of unchallenged usage might do, and a

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\* On some generic and specific appellations of North American Birds. By Leonhard Stejneger. Proc. U. S. Nat. Mus., June, 1882, pp. 28-43.

hundred certainly would suffice, to eliminate the factor of "contemporaneous courtesy," and the shades of a few departed greatnesses might not be offended by being invited to yield a point now and then for the benefit of the many whom natural selection has not yet eliminated from the struggle for existence.

Stejneger's points seem to be well taken in the main; and though we have not yet had opportunity of verifying them, we presume the restitutions and substitutions he proposes are available if not indeed necessary under the priority statute. But has he in all cases taken up names which rest upon diagnosis? Does indication of a type-species make a generic name valid? Some other objections might also be raised. We pass no judgment, *pendente lite*, but simply note the following propositions advanced:—*Phænicurus* Forst., 1817, for *Ruticilla* Naum., 1822.—*Cinclus merula* Schäff., 1789, for *C. aquaticus* Bechst.—*Regulus cristatus* V., 1807, for *R. satrapa* Licht., 1823.—*Chelidon* Forst., 1817, for *Hirundo* L. et auct. (*rustica*, etc.).—*Hirundo* L., 1758, for *Chelidon* Boie, 1822.—*Clivicola* sive *Riparia* Forst., 1817, for *Cotile* Boie, 1822.—*Calcarius* Bechst., 1803, for the birds now commonly called *Centrophanes*, and *Plectrophenax*, g. n., for "*Plectrophenax*" *nivalis*.—*Otocoris* Bp., 1839, for *Eremophila*, preocc. in botany, and by *Eremophilus* in ichthyology.—*Archibuteo norvegicus* Gunnerus, 1767, for *A. lagopus* Gm. (but there is *A. lagopus* Brünn, 1764).—*Morinella* M. & W., 1810, for *Strepsilas* Ill., 1811.—*Vanellus capella* Schäff., 1789, for *V. cristatus* M. & W., 1803.—*Ægialitis alexandrinus*, L., 1758, for *Æ. cantianus* Lath., 1790.—*Gallinago cælestis* Freüzell, 1801, for *G. media* Leach, 1816.—*Totanus nebularius* Gunnerus, 1767, for the Greenshank.—*Pavoncella* Leach, 1816, for *Machetes* Cuv., 1817.—*Tadorna dameatica* Hasselq., 1762, for *T. cornuta* Gm., 1788.—*Harelda hyemalis* L., 1758, for *H. glacialis* L., 1766.—*Eniconetta* Gray, 1840, for *Polysticta* Eyt., 1836, preocc. by *Polysticta* Smith, 1835, and for "*Stellaria*"! Bp., 1838, preocc. in botany.—*Gavia* Boie, 1822, for *Pagophila* Kaup, 1829, and the species *G. alba* (Gunn., 1767, for *P. eburnea* Phipps, 1774.—(*Larus hyperboreus* Gunnerus, 1767, for *L. glaucus* Brünn, 1764).—*Hydrochelidon nigra* (L., 1758, p. 137) for *H. lariformis* (Ibid., p. 153).—The short and long-tailed Jägers to be respectively *Stercorarius parasiticus* (L., 1758, p. 136), and *S. longicaudatus* (V., 1819).—*Urinator* Cuv., 1799, for *Colymbus* auct., nec Briss., 1760: *U. immer* (Brünn, 1764, p. 38) instead of *U. torquatus* (id., ibid., p. 41); and *U. lumme* Brünn, 1764, for *C. septentrionalis* L., 1766.—E. C.

INGERSOLL'S BIRDS'-NESTING.\*—This little book is intended for a guide to the beginner, and as such it will no doubt be of service. The book may be summarized as a readable account of the various modes of collecting birds' eggs and nests. There are, however, a few points which we regard with suspicion, as the contrivances for descending cliffs; such things in

\* Ingersoll, Ernest. Birds'-Nesting: A Handbook of Instruction in Gathering and Preserving the Nests and Eggs of Birds for the Purposes of Study. Salem, 1882.

careless hands would become instruments of self-destruction. A long account of the various paraphernalia for blowing and marking eggs is given. To the novice such things may be amusing, but are sure sources of disaster. A keen eye, accuracy of hand and a mind to govern, not patent scissors and forceps, are the requisites for blowing eggs.

The list of unknown nests, which does not claim to be free from faults of omission, contains faults of admission, though these are not numerous. Finally, we would heartily indorse all advice for absolute identification of eggs and the avoidance of gummed labels. — J. A. J.

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## General Notes.

NOTE ON *MIMUS POLYGLOTTUS*. — In the summer of 1879 I found on the Platte River, about a mile west of Fort Fetterman, Wyoming, in Lat.  $42^{\circ} 23' 35''$  N. and Long.  $105^{\circ} 21' 4''$  W., a pair of Mocking-birds (*Mimus polyglottus*) breeding; the nest was placed in a low cottonwood, very near the river bank. In the following year these birds, undoubtedly the same pair, returned and reared a brood in identically the same place. This time I secured the male bird; and the specimen is now in my private collection.

In the "Birds of the Colorado Valley" Dr. Coues tells us, when referring to the limits of *Mimus*, that "the northermost records generally quoted fix the limit in Massachusetts; but Dr. Brewer speaks of a single individual seen near Calais, Me., by Mr. George A. Boardman. Another record from an extreme point, given by Dr. P. R. Hoy, is above quoted; the extension of the bird to Wisconsin, as there indicated, has been commonly overlooked. Other States in which the bird is known to have occurred are New York, Ohio, Indiana, Illinois, Missouri, Iowa, and Kansas. The parallel of  $40^{\circ}$  N. has been named as its usual or normal limit,"

In view of these facts, and what I have learned from other ornithologists, it seems to me that this case is entitled to record, as another interesting instance, extending the limits of this bird. — R. W. SHUFELDT, *Washington, D. C.*

THE NEST OF THE HOUSE WREN. — Some writer speaks of the well known habit of the House Wren of filling up any cavity within which it builds its nest with sticks and rubbish, as a "survival" of an old habit for which there would seem to be no present use. I think I have seen this statement in some of the writings of Dr. Elliott Coues, though I cannot refer to the book or page. Possibly it may have been stated by some one else. But it is a generally recognized fact that if a box holds half a peck the little birds will fill it up full! It seems to me, however, that while this



may be really a "survival," it is still a most useful habit. When a hole or space is so filled the nest proper is generally built on the side of the mass of rubbish opposite to the entrance and as far as possible from it. Manifestly there is a clear purpose in this—viz: that of protection from any enemy seeking an entrance. I have observed many nests, in large cigar boxes, and in the majority find this state of things to exist. The interior space will be filled with sticks, leaving a little passage way over the top, through which the bird can reach the nest on the back side of the rubbish. It seems to me that this is clearly a defensive habit, necessary at this time. When they build a nest in the skull of a horse or ox, it will be found that they follow the same rule, and that it will be very difficult to get at the nests.

But their practices are sometimes varied. If a box is not too large, and the hole is only large enough to admit of the passage of the birds, they will often carry in only just enough material to build the nest, leaving the space all open above. I have often known them to pursue this course in building in a cigar box where a small hole had been made at the middle of one of the sides. But if the box is a large one with a large hole cut through the end near the top, as it is suspended on a tree or the side of a building, then they will carry in "fully a peck of rubbish," and build the soft nest down on the side opposite the entrance.—CHARLES ALDRICH, *Webster City, Iowa*.

REMARKABLE PLUMAGE OF THE ORCHARD ORIOLE. — There is in the collection here a very curiously marked specimen of the Orchard Oriole (*Icterus spurius*) from Columbia, Pa. It is evidently a male bird in the transition stage of plumage from young to that of the adult. Young males of this species usually exhibit "confused characters of both sexes," but in this case the male plumage is confined to the right side of the bird, and the female plumage to the left side, the two colorations uniting on median lines above and below. So distinctly is this peculiarity marked, that a bilateral section of the bird would divide the phases about equally. The left side, however, shows very slight traces of black and chestnut, yet not so distinct as to lessen the general yellowish-olive appearance of the female. There is more of the white on the coverts of the left wing than usual.—CHARLES H. TOWNSEND, *Acad. Nat. Science, Philadelphia, Pa.*

THE NEST AND EGGS OF PERISOREUS CANADENSIS. — The nest upon which the following description is based was found by Mr. P. S. Glasier on April 7th, 1881, twenty-three miles from Grand Falls, New Brunswick. It was built in a small fir tree with few branches, about ten feet from the ground. The tree was in "mixed land" beside a brook, on the south side of a hill and near a lumber camp. From the men in the camp it was learned that the bird built the nest about the middle of March, and had been sitting for ten days. The parent bird was found on the nest, shot, and forwarded to me, so that there can be no doubt of identity.

The nest is rather a large structure, between nine and ten inches in diameter and five inches deep. The cavity is slightly oval, measuring three and six-tenths by three and two-tenths, and is two inches deep.

The bottom is formed of large pieces of rotten wood, which must have been torn from some neighboring stump, while the sides are supported by a scraggy structure of long twigs. The walls are formed of strips of bark and the subjacent rotten wood, apparently of cedars, cocoons, the remains of wasp nests, lichens and the like. All this material is closely packed together, but not woven, so that were it not for the outer coat of twigs the whole would quickly fall apart. On one side, snarled up among the twigs, is a long piece of white twine, which shows that the neighboring camp was called upon to pay its tribute. The lining is quite thick, and offers a decided contrast to the walls. Rootlets of various kinds form the greater part, though grass and the remains of wasp nests form the floor. A few feathers are scattered throughout the structure and about as many more are to be found inside. By far the greater part of these are from the Jays themselves, and they might be regarded as of accidental occurrence were it not for a few from some species of Grouse. As a whole the nest is a substantial structure, admirably adapted to keep the eggs and nestlings warm.

The eggs were three in number, and are of about the same size and form as those of the Blue Jay. Their ground color is a light green of much the same color as the Field Sparrow's egg. Two of the eggs are thickly covered with fine spots of lavender and light brown, the spots being most abundant at the large end. The third has less lavender and more brown, while the spots are of considerable size and evenly distributed.—J. AMORY JEFFRIES, *Boston, Mass.*

NOTES ON THE PLUMAGE OF NEPHÆCETES NIGER BOREALIS.—An examination of ten birds of this species, taken at Howardsville, Colorado, in 1880 and 1881, leads me to believe that four years are necessary for them to acquire their complete plumage. A young male of the year, taken Sept. 17, was marked as follows. General color dull black, every feather tipped with white, scarcely appreciable on upper back and throat, broader on upper tail coverts and rump. Crissum almost pure white. In birds of the second year the general plumage has a brownish cast; feathers of back tipped with brown, the head whitish, belly feathers yet broadly tipped with white. The third year the color is black, with a very faint edging of white on under tail coverts. In the fourth year pure black, forehead hoary, neck with a brownish wash. Feathers bordering the black loreal crescent whitish.

Tail in young of first year, rounded; in second year, slightly rounded; in third year slightly emarginate, feathers becoming more acute. In adult, forked, outer feathers three-eighths of an inch longer than inner.

I do not know when they come—some time late in June—but they remain until long after the Violet-green Swallows leave. They always hunt in flocks, range far above 13,000 feet and breed up to at least 11,000 feet. Those I have shot have had their crops filled with *Ephemeridæ*, and it

is only when a cloud of insects is discovered low down that the birds come within gunshot range. Often one will sweep down almost to the earth and, swinging on in the same ellipse, soar far up entirely out of sight.

Measurements from dried skins of eight specimens give an average length of six and seven-sixteenths inches, with extremes of seven and one-half inches—an adult male. and five and seven-eighths inches—a young female; and an average wing of six and five-sevenths inches, with extremes of six and seven-eighths and six and three-eighths inches. — FRANK M. DREW, *Bunker Hill, Ill.*

PLUMAGE OF THE YOUNG OF ECLECTUS POLYCHLORUS — Dr. A. B. Meyer in the P. Z. S. for 1877, p. 801, says in an article on *Eclectus polychlorus*: "Formerly I discussed the question whether the young bird in both sexes is plain green or not; but I now believe that it is red in both sexes, *i.e.* bears the dress which the female keeps during its whole life." This conclusion would seem to be incorrect, since among a series of these birds in the possession of Prof. H. A. Ward, there is one bird so young as not to be fully fledged, but which is nevertheless of the same bright green color as the adult males. This substantiates the statement of the Rev. George Brown that the young birds have the same colored plumage as the adults. — F. A. LUCAS, *Rochester, N. Y.*

[This is a large Parrot found in the Malacca and Papuan Islands. The occurrence of "young red-and-blue birds" has already been recorded (see Ibis for 1878). — J. AMORY JEFFRIES.]

AN OWL'S EGG LAID IN CONFINEMENT. — The history of my Acadian Owl, given in a late number of this Bulletin,\* has an interesting sequel. On February 4, 1882, the bird (then but nine months old) astonished its friends—and perhaps itself as well—by laying an egg in the bottom of its cage. This, when first brought to me, was of normal size and shape, but soft and leathery to the touch, like the egg of a turtle. One side was fractured; and soon afterward the shell around the edges of the hole began to curl inward until, in a short time, the whole egg became shrivelled and distorted. Finally, in the course of a day or two, the shell crumbled and scaled off in small fragments leaving only the half-dried yolk and albumen.

Of course more eggs were looked for, and in anticipation, the floor of the cage was lined with saw-dust and a hollow stump even supplied to serve as a nesting-place. But despite these attentions the bird obstinately refused to gratify our hopes. For several days after the removal of her egg she was restless and irritable, continually flying from perch to perch, and fiercely attacking any one who ventured to approach her. Indeed, it was two or three weeks before she recovered her wonted gentleness.

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\* Vol. VII, pp. 23-25.

I cannot now recall an instance of the breeding of Owls in confinement, but the present occurrence would apparently indicate that it might be accomplished with Saw-whets, which, as captives, seem to be more animated and cheerful than most of the members of their sedate family.—WILLIAM BREWSTER, *Cambridge, Mass.*

BUTEO BRACHYURUS — A CORRECTION.—An inaccuracy, comparatively so unimportant that I have hitherto neglected to call attention to it, will be found in the paper "On a Tropical American Hawk to be added to the North American Fauna" (this Bulletin, Vol. VI, p. 207). The Hawk in question was shot Feb. 22, 1881—not Feb. 1, as stated in the article referred to. I was at Palatka at the time, and saw the bird in the flesh the day it was shot. It was secured on the outskirts of the town, early in the morning, by a young taxidermist, Mr. Wm. Dickinson, since deceased. We could not determine the species, and he would not part with the specimen, a very fine one, but "set it up" for himself. A short time afterwards he presented it to Mr. G. A. Boardman.—J. DWIGHT, JR., *New York City.*

THE TURKEY BUZZARD IN NEW HAMPSHIRE.—A specimen of *Cathartes aura* was shot this spring near Hampton Falls, N. H., by Mr. Frank Percell. The bird was killed April 6th or 7th, and received by Mr. C. I. Goodale on the 8th. When I examined it on the 10th it was still quite fresh.—CHARLES B. CORY, *Boston, Mass.*

RAPACIOUS BIRDS IN CONFINEMENT.—In the winter of 1874 I spent several months with a friend who had a number of rapacious birds in confinement. There were a couple of Barred Owls, a Great Horned Owl, and a Rough-legged Hawk, living together upon excellent terms in one apartment; in another, half a dozen Mottled Owls; and in another a superb Bald Eagle. Most of these birds became quite tame after a short period of captivity, tolerating our presence in their quarters, taking food from our hands, and even submitting to caresses. One little *Scops* developed especial docility. My friend, who was a taxidermist, used to place it upon a perch at his side and copy strigine attitudes from nature. The accommodating bird would sit content for half an hour at a time, and never objected to any sort of gentle handling. One of its brethren, however, was vicious and untameable. He nipped our fingers whenever occasion offered, snapped and spat if even approached, and finally sealed his own doom by decapitating his gentle associate.

We did not succeed in cultivating a spirit of great tractability in the Eagle. Aside from the amusement he occasionally afforded in tackling living quarry, generally some superfluous cat, he was a rather uninteresting captive. One morning we omitted his breakfast, but in the course of the forenoon introduced a kitten into his apartment. He eyed her sharply for a few moments, then persistently ignored her, and in the evening she was removed unscathed. Upon this we instituted upon the royal bird a brief

course of starvation, and then submitted the unfortunate kitten again. This time her reception was very different. At sight of her he manifested great excitement, and in a very few minutes left his perch with a jump and a flop, and seized the poor beast in his talons. He struck her very nicely, pinning fore paws and head together with one foot, the hind paws together with the other, thus preventing the slightest resistance. My remorse at this stage of the proceedings was somewhat alleviated by the fact that the kitten did not even quiver, having apparently been instantly killed by the force of the blow. However, the Eagle at once put an end to what little life may have been left by breaking her spine with his beak. He thereupon tore a hole in her abdomen, and cast the intestines daintily aside. The contents of the stomach were examined and, with the exception of a single tid-bit which appeared to be a piece of bread, rejected. The rest of the body was then rapidly devoured. On the following morning a full-grown tom-cat was turned loose in the cage. The Eagle attacked him several times but was valiantly repelled, and up to the end of the third day, when he made his escape, Thomas remained master of the situation. Dissatisfied with this experiment, my friend subsequently introduced the cat in a half-stunned condition, and after getting well scratched the Eagle succeeded in overcoming him. — NATHAN CLIFFORD BROWN. *Portland, Maine.*

NOTE ON *MARECA AMERICANA*.—I shot at Wayland, Mass., October 1, 1881, a young male Widgeon (*Mareca americana*). It was flying in company with a flock of twelve others, apparently of the same species. — A. THORNDIKE. *Brookline, Mass.*

DESTRUCTION OF BIRDS BY THE COLD WAVE OF MAY 21ST AND 22ND. — It seems worthy of note that, judging from indications in this vicinity, the destruction of bird life by the recent cold wave must have been very considerable.

On the morning of May 21st, a specimen of *Helminthophila peregrina* was picked up so nearly chilled to death that it died shortly afterwards. The same was also true of a specimen of *Dendroica pennsylvanica*. On the morning of May 22nd, three other specimens of the following species were picked up here which had apparently died of cold: *Dendroica maculosa*, *Myiodyctes pusillus*, and *Empidonax minimus*.

These facts suggest that the abundance of bird life may, to a considerable extent, be influenced by sudden extreme changes of temperature, as well as by heavy gales. — F. H. KING, *River Falls, Wis., May 24, 1882.*

A "TIDAL WAVE" OF BIRDS IN WASHINGTON. — In the twenty-five years during which I have paid more or less attention to birds hereabouts I have never seen anything like the "wave" that rolled up in the second and third weeks of May of this year. The highest spring "season" is usually the month from April 20 to May 20, at which latter date the tide has usually ebbed equably from its greatest height at the middle of May. This year the birds seemed to be held back by the cold and wet, and such

an accumulation has seldom if ever been seen before. The streets and parks were *full* of the birds, and the daily papers all had their say upon the unwonted apparition. In the Smithsonian Grounds, for example, I saw one day a *flock* of a hundred or more Orchard Orioles, mixed with Baltimore. There were flocks of Scarlet Tanagers, Rose-breasted Grosbeaks, etc., and any quantity of Thrushes, Vireos, Flycatchers and Warblers—among the latter the rare beauty *Dendroica tigrina*. Of the latter Dr. Prentiss took several—the only ones we have known to be captured here for many years. The cause of this gathering of the clans was doubtless the cold wave Mr. King speaks of in the preceding paragraph.—ELLIOTT COUES, *Washington, D. C.*

MORE DEFINITE STATISTICS NEEDED IN REGARD TO THE ABUNDANCE OF BIRDS.—It is deeply to be regretted, it seems to me, that we have so little specific information in regard to the abundance of birds in the various portions of the United States from which lists of species have been published.

Such terms as "common," "not common," "abundant," "rare," "rather rare," etc., may have such different values in the minds of different observers, as to render them of but little value for any but the most general considerations. They are absolutely valueless in the discussion of such economic questions as, Can birds ever become abundant in thickly settled districts? and, What birds, if left to themselves, are likely to become most abundant in thickly settled sections?

The table given below indicates the character and kind of information which is much needed in the discussion of many important ornithological questions.

The first four columns are compiled from notes made in Jefferson County, Wisconsin, between July 31 and August 7, 1877; those in the last four columns are from notes taken in the vicinity of Ithaca, N. Y., in 1878.

In each column, opposite the name of the species, is given the number of individuals which were observed in travelling the distance indicated near the foot of each column. The item, "birds seen or heard but not named," includes those individuals which were known to exist in the territory passed over, but which for various reasons could not be identified with certainty.

The salient features of the two localities, briefly stated, are these:—

In the vicinity of Ithaca, there is a long, deep, and narrow valley, having somewhat rolling, glen-cut sides: in it lies Cayuga Lake, deep and weedless, stretching, like a broad river, to the northward. Its east and west banks are abrupt and rocky and cut, at intervals, by deep wooded glens. A small grass swamp, bearing a few trees, at the south end of the lake and running up into the city, is about the only low land in the vicinity. Formerly a mixed deciduous and evergreen forest covered the hills. Now, mere remnants stand near together upon small closely packed farms on both sides of the valley. The houses are numerous, the orchards large, and there are few fields not having some trees standing in them.

In the portion of Jefferson County where the notes were taken, the country is nearly level, with gentle undulations, and is traversed by Bark and Rock Rivers. The streams make a sharp line between prairies and openings on one side and heavy hard and soft-wood timber on the other. Marshes trend along the streams, and shallow reedy ponds are common. Compared with the vicinity of Ithaca, the farms are larger, the houses less numerous, the orchards smaller, the woods and groves larger, and but few trees stand in the fields.

Route 1 led from a point about half a mile north of Bark River out across cultivated fields. Routes 2 and 3 each led east from Rock River, north of Jefferson, alternately through pieces of heavy timber and across dry cultivated fields. Route 4 led from the Crayfish west upon the prairie southwest of Aztelan, traversing dry treeless fields and leading through two small groves. Route 5 led from the University buildings west across the valley, leading through a pasture, through the north end of the city, through the swamp, and up the railroad, bordered on one side by cultivated fields, and by tangled thickets on the other. Route 6 led directly east from the campus to Varna, and then southwest along the railroad. On this trip only cultivated fields were crossed and one small piece of woods traversed. Route 7 led up the valley from Ithaca along the east side, and then across to Enfield Falls. On this tramp we passed in turn along the railroad, bordered with small scattering thickets on both sides, across the inlet through low fields, and then past cultivated fields and small pieces of woods. Route 8 lay ten miles east of Ithaca, and led from McLean off to the southeast of Dryden, and then through Dryden to Freeville. A branch of Fall Creek was crossed twice, and, with the exception of a small marsh near Freeville, only cultivated fields and small pieces of wood were passed.

NAME.	ROUTES.							
	1	2	3	4	5	6	7	8
<i>Turdus migratorius</i> . . . . .	11	....	....	3	20	13	31	44
<i>Turdus fuscescens</i> . . . . .	....	....	....	....	2	....	2	4
<i>Mimus carolinensis</i> . . . . .	2	8	3	2	12	....	25	7
<i>Sialia sialis</i> . . . . .	1	2	....	....	2	8	5	17
<i>Parus atricapillus</i> . . . . .	....	....	....	....	....	....	9	....
<i>Sitta carolinensis</i> . . . . .	3	7	2	....	....	1	2	3
<i>Troglodytes ædon</i> . . . . .	....	....	....	....	....	1	....	5
<i>Eremophila alpestris</i> . . . . .	....	....	....	....	....	....	....	3
<i>Cistothorus stellaris</i> . . . . .	1	....	....	....	....	....	....	....
<i>Dendrocæa æstiva</i> . . . . .	....	....	....	....	1	2	5	5
<i>Geothlypis trichas</i> . . . . .	....	....	1	3	....	....	....	....
<i>Setophaga ruticilla</i> . . . . .	2	15	5	....	2	....	....	....
<i>Pyrranga rubra</i> . . . . .	1	3	....	....	....	....	....	....
<i>Hirundo horreorum</i> . . . . .	5	5	....	....	....	12	7	20
<i>Tachycineta bicolor</i> . . . . .	....	2	....	....	....	....	....	....
<i>Petrochelidon lunifrons</i> . . . . .	....	....	....	....	2	12	10	55
<i>Cotyle riparia</i> . . . . .	....	....	....	....	....	....	....	13
<i>Progne purpurea</i> . . . . .	2	....	....	1	....	....	....	....
<i>Ampelis cedrorum</i> . . . . .	....	....	8	....	4	7	12	4
<i>Vireo olivaceus</i> . . . . .	1	13	13	....	....	....	1	....
<i>Vireo gilvus</i> . . . . .	1	....	....	3	....	....	....	....

NAME.	ROUTES.							
	1	2	3	4	5	6	7	8
<i>Vireo flavifrons</i> . . . . .	.....	.....	10	4	.....	.....	.....	.....
<i>Lanius excubitorides</i> . . . . .	1	.....	.....	.....	.....	.....	.....	.....
<i>Chrysomitris tristis</i> . . . . .	9	27	5	4	6	28	32	44
<i>Poœcetes gramineus</i> . . . . .	5	.....	.....	10	.....	16	19	28
<i>Melospiza melodia</i> . . . . .	6	5	8	17	7	33	23	73
<i>Melospiza palustris</i> . . . . .	.....	.....	1	.....	.....	.....	.....	.....
<i>Spizella socialis</i> . . . . .	3	1	1	.....	7	33	17	36
<i>Spizella pusilla</i> (shot) . . . . .	.....	.....	.....	2	.....	.....	.....	.....
<i>Cyanospiza cyanea</i> . . . . .	.....	5	.....	.....	.....	2	3	3
<i>Pipilo erythrophthalmus</i> . . . . .	.....	3	3	.....	.....	.....	.....	.....
<i>Dolichonyx oryzivorus</i> . . . . .	.....	18	3	.....	.....	5	22	52
<i>Molothrus pecoris</i> . . . . .	.....	.....	.....	.....	2	.....	.....	10
<i>Agelaius phœniceus</i> . . . . .	.....	1	.....	.....	12	.....	10	12
<i>Sturnella magna</i> . . . . .	1	2	.....	.....	2	8	5	11
<i>Icterus baltimore</i> . . . . .	.....	.....	.....	.....	7	11	5	3
<i>Quiscalus purpureus</i> . . . . .	.....	.....	.....	.....	.....	.....	.....	2
<i>Corvus americanus</i> . . . . .	1	2	.....	.....	3	10	8	28
<i>Cyanurus cristatus</i> . . . . .	.....	.....	.....	1	.....	.....	.....	.....
<i>Tyrannus carolinensis</i> . . . . .	8	.....	.....	10	4	4	.....	8
<i>Sayornis fuscus</i> . . . . .	2	.....	.....	4	2	.....	22	11
<i>Contopus virens</i> . . . . .	3	20	15	4	.....	.....	2	4
<i>Empidonax minimus</i> . . . . .	.....	.....	.....	.....	1	.....	.....	.....
<i>Chætura pelagica</i> . . . . .	.....	.....	.....	.....	4	3	13	12
<i>Trochilus colubris</i> . . . . .	1	5	1	1	.....	1	1	.....
<i>Ceryle alcyon</i> . . . . .	2	7	.....	.....	.....	.....	.....	.....
<i>Coccyzus erythrophthalmus</i> . . . . .	.....	.....	.....	.....	2	.....	1	.....
<i>Picus villosus</i> . . . . .	2	.....	1	.....	.....	.....	.....	.....
<i>Picus pubescens</i> . . . . .	.....	1	.....	.....	.....	.....	.....	.....
<i>Sphyrapicus varius</i> . . . . .	1	2	4	.....	.....	.....	.....	.....
<i>Melanerpes erythrocephalus</i> . . . . .	4	2	.....	.....	.....	2	.....	3
<i>Colaptes auratus</i> . . . . .	7	.....	.....	6	2	.....	2	1
<i>Circus hudsonicus</i> . . . . .	.....	.....	.....	5	.....	.....	.....	.....
<i>Falco sparverius</i> . . . . .	.....	.....	.....	.....	1	.....	.....	.....
<i>Hawk</i> . . . . .	.....	2	.....	.....	.....	.....	2	.....
<i>Zenaidura carolinensis</i> . . . . .	5	.....	.....	.....	.....	.....	4	1
<i>Bonasa umbellus</i> . . . . .	.....	.....	10	.....	.....	.....	.....	.....
<i>Ægialites vociferus</i> . . . . .	17	2	.....	.....	.....	.....	.....	.....
<i>Tringoides macularius</i> . . . . .	1	11	.....	.....	.....	.....	4	3
<i>Actiturus bartramius</i> . . . . .	2	.....	.....	.....	.....	.....	.....	.....
<i>Ardea herodias</i> . . . . .	2	.....	.....	.....	.....	.....	.....	.....
<i>Ardea virescens</i> . . . . .	2	3	.....	.....	.....	.....	.....	.....
<i>Rallus virginianus</i> . . . . .	1	.....	.....	.....	.....	1	1	.....
<i>Podilymbus podiceps</i> . . . . .	1	.....	.....	.....	.....	.....	.....	.....
Birds seen or heard, but not named . . . . .	20	36	18	15	20	69	100	101
Total number of birds observed	137	141	112	95	127	282	405	626
Number of miles traveled . . .	4	5	3	3	24	5	7	11
Average number of birds per mile . . . . .	34	28	37	32	56	56	58	57
Total number of species . . .	35	27	18	17	23	22	31	32

Total average number of birds per mile in Jefferson County is about thirty-three.

Total average number per mile in the vicinity of Ithaca is about fifty-seven.



The notes from which these tables are prepared were obtained by walking continuously over the routes named, without retracing steps in any case. When a bird was observed a record was made in the form of a dot placed against the name of the bird. The dots were placed for convenience in groups of five each separated by straight lines.

It seems a little remarkable that the four averages of the two localities should so nearly coincide. The fact that they do coincide so closely suggests that, unless we have here an unusual recurrence of figures, the averages represent a tolerably definite factor of the bird population of the two localities at the time the observations were made. The statistics do not indicate the actual bird-population in the two localities; but they do show, it seems to me, the relative abundance in the two sections, and, to a large extent, the relative abundance of the various species in each locality.

It is to be observed that the notes from the vicinity of Ithaca were taken in June before many of the young birds were upon the wing, while those from the other locality were made after the breeding season. The two localities should not be compared, therefore, without taking this fact into account. For instance, all the Bobolinks observed on trip 8 were, with two exceptions, males. Hence the figures probably show only about one-half the number of birds of this species that existed in the territory at the time of the visit.

In July, 1878, about the middle of the month, I went over route 5 and 6 a second time to see what effect upon the average the addition of the young birds would have. The whole number of birds observed was a little more than double that observed in June.

Perhaps some one will suggest a better method of obtaining the facts recorded in this connection.—F. H. KING, *River Falls, Wis., May 24, 1882.*

REMARKS ON FIVE MAINE BIRDS.—It appears that no formal announcement of the occurrence of the Gray-cheeked Thrush (*Hylocichla aliciae*) in the State of Maine has ever been made, though the course the bird is known to pursue in its migrations renders such an announcement of slight importance. It may be stated, however, for the benefit of compilers, that this Thrush is a regular, not very common, spring and fall migrant in southern Maine, reaching Portland in spring about the middle of May, and in autumn about September 20.

A *propos* of Dr. Coues' recent prediction\* that the Titlark (*Anthus ludovicianus*) will yet be ascertained to breed occasionally along the Maine coast, is there anything but inferential evidence to indicate that it occurs there at all in spring or summer? Being known to pass through Massachusetts in spring and to occur on the island of Grand Manan† at that

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\*N. E. Bird Life, p. 104, foot note.

† See Herrick, Birds of Grand Manan, p. 6.

season, it is fair to suppose that the Titlark also touches at favorable points in Maine while *en route* to its breeding grounds. Nevertheless neither my own observations nor the records of other observers substantiate this hypothesis.

The once prized Ipswich Sparrow (*Passerculus princeps*) must now take its place among the common autumnal migrants of southern Maine, though restricted, so far as I am aware, to the sea-coast. In spring, however, it is uncommon if not rare. Since the capture of the first Maine specimen,\* March 20, 1875, I have seen but two other spring specimens. These I found upon Old Orchard Beach, March 28, 1882, and one of them is now in my collection. In their autumnal migration the birds reach Cumberland County about Oct. 13, remaining at least until Nov. 6, later than which I have never looked for them. Upon almost any day between these dates the collector may find a dozen or more individuals along the sandy shore between Scarborough Beach and the Saco River.

In the Proceedings of the Portland Society of Natural History for April, 1882, I spoke of the Ring-necked Duck (*Fulix collaris*) as having but once been taken in the vicinity of the city within my experience. On the very morning upon which my paper left the press, I found in one of the city markets two adult males which were killed in the Presumpscot River, March 31, 1882. On April 12 I found another male in the market; the next day I purchased a pair from a sportsman in Deering; and on April 17 detected another male in the market. That the bird's occurrence in such numbers is very unusual there can be no doubt. In fact, so far as I have been able to learn, our most experienced hunters of wild fowl either knew the species only by tradition, before this year, or else were wholly unacquainted with it.

Mr. Brewster has more than once advanced good evidence to the effect that the Short-tailed Tern (*Hydrochelidon lariformis*) should be considered a regular and not uncommon visitor to suitable localities on the New England coast.† Specific records for Maine are, notwithstanding, few as yet.‡ Two recent specimens should go on the list. One of these was killed in Scarborough, the other at Wells Beach, York County, in the autumn of 1881. — NATHAN CLIFFORD BROWN, *Portland, Maine*.

MAINE NOTES. — *Oporornis agilis* (Wils.) Baird. CONNECTICUT WARBLER. — Mr. Nathan Clifford Brown, in a paper read before the Portland Society of Natural History April 3, 1882, gives this bird for the first time a place in the Maine fauna. He met with it Aug. 30, 1878, on Cape Elizabeth. I would record a specimen which I took in August, 1879, at Ebeme Lake. This makes the second record for this State.

*Hylocichla unalascae pallasii* (Caban.) Ridgw. HERMIT THRUSH. — These birds breed commonly with us every year (Bangor). Their eggs

\* See Rod and Gun, Vol. VI, p. 65.

† See especially this Bulletin, Vol. VI, pp. 124-25.

‡ See this Bulletin, Vol. IV, p. 108, and Vol. V, p. 63.

are usually taken early in June, but I find among my notes the record of a set taken August 5, 1873, at Dedham, Maine, the eggs being but slightly incubated. This would seem to be presumptive evidence for the belief that these birds raise two broods in a season.

**Lomvia arra brünnichi** (Scl.) Ridgw. BRÜNNICH'S GUILLEMOT; and **Lomvia troile** (Linn.) Brandt. COMMON GUILLEMOT. — These birds are found on our coast in the winter season, Brünnich's Guillemot being quite numerous, while the Common Guillemot is more rare. Some idea of their comparative numbers may perhaps be obtained from the fact that during the past two years I have procured some thirty specimens from different points on our coast (from Grand Manan to South Bristol) and out of this number only *one* was a representative of the Common Guillemot (*L. troile*.) The experience of Mr. N. A. Eddy of this city is exactly similar, and out of about an equal number of specimens he has obtained but a single example of *troile*. Other collectors in this vicinity who have received numbers of Guillemots have not obtained a specimen of *Lomvia troile*.

**Actodromas fuscicollis** (Vieill.) Ridgw. BONAPARTE'S SANDPIPER. — This bird is not given as a resident of our State in Hamlin's, Verrill's or Maynard's lists, but is still a not uncommon autumnal migrant along our coast. They are seldom met with in the interior, and the only records of their capture away from the coast, so far as I can learn, are here given. Nathan C. Brown furnishes me the first record from his notes as follows: "Oct. 16, 1876. During the past two weeks our party has taken only three specimens of this bird at Lake Umbagog. One was shot about Oct. 2, the two others upon Oct. 14." On October 23, 1881, I came upon a flock of four at a small pool near this city (Bangor), and obtained three of them. Mr. N. A. Eddy afterwards took one at the same place.—HARRY MERRILL, *Bangor, Maine*.

STRAY NOTES FROM LOOKOUT MOUNTAIN. TENN. — The following notes were taken on Lookout Mountain, Tenn., from March 17 to April 4, 1882. The "Mountain," so-called, is a ridge, some twenty miles or more in length, extending nearly due north and south. Its altitude ranges from 2200 to 2450 feet above the sea, and from 1500 to 1750 feet above the Tennessee River, which touches the base at its most northern point; its width, at the top, is from half a mile to two miles. About two miles of its northern end is in Tennessee, the rest being in Georgia. My collecting was done mostly on the Tennessee portion, but occasionally I went into Georgia, my longest trip into that State being five miles. The country is, for the most part, heavily wooded, although towards the northern end a great deal of the timber was destroyed during the late war and the new growth is still quite small. There are numerous streams in the ravines, along the banks of which laurels, blackberries, etc., grow luxuriantly. On the east side of the ridge there are, for half a mile, huge boulders, and the trees, principally pines, on and around them, were, I found, a favorite re-

sort for the smaller birds. The whole number of species noted during my stay was fifty, but I give only such notes as may, perhaps, be of general interest.

1. *Sitta canadensis* Linn. RED-BELLIED NUTHATCH.—Met with but once; on March 29, in a partial clearing.

2. *Dendroeca virens* (Gmel.) Baird. BLACK-THROATED GREEN WARBLER.—First seen March 19. Taken March 20. After this date it was not at all uncommon, and could be heard singing at almost any hour of the day.

3. *Peucæa æstivalis illinoensis*, Ridgw. OAK-WOOD SPARROW.—First noted April 3. Two males procured April 4, both in song. These were both well-marked examples of *illinoensis*, one, indeed, carrying the differentiation to an extreme degree. In this specimen the back was of a reddish-brown color, entirely without streaks, and exactly resembled extreme specimens from Illinois. The other had the back distinctly streaked with black, and closely resembled a specimen from Alabama, taken by Mr. N. C. Brown. I found these birds both in groves of small pines and in open fields where there were plenty of brush-piles. They seemed to be quite common, as I heard several singing, at the same time, in different parts of the field. I was enabled to compare my specimens with those of the Smithsonian Institution through the kindness of Mr. R. Ridgway, and for this and many other favors I wish to tender him my grateful thanks.

4. *Corvus corax carnivorus*, (Bartr.) Ridgw. AMERICAN RAVEN.—Quite common. Said to breed on the cliffs. I have seen as many as eight or ten chasing each other through the air at one time.

5. *Catharista atrata* (Wils.) Less. CARRION CROW.—Quite common. Breeds. They seem to keep in flocks more than *Cathartis aura*.

6. *Bonasa umbella* (Linn.) Steph. RUFFED GROUSE.—Once seen and once heard "drumming." The local sportsmen report them as being quite scarce.—W. H. Fox. *Washington. D. C.*

#### ERRATA.

Vol. VII. page 119. line 8. for "struggling" read "straggling"; page 122. line 9 from bottom. for "Rellon" read "Redlon"; page 123. line 28. for "Before" read "Upon."

# BULLETIN

OF THE

## NUTTALL ORNITHOLOGICAL CLUB.

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### ON A COLLECTION OF BIRDS LATELY MADE BY MR. F. STEPHENS IN ARIZONA.

BY WILLIAM BREWSTER.

(Continued from p. 147.)

60. **Carpodacus frontalis** (Say) Gray. HOUSE FINCH.  
571, ♀ ad., Camp Lowell, June 22.

61. **Loxia curvirostra mexicana** (Strickl.) Baird. MEX-  
ICAN CROSSBILL. — Chiricahua Mountains; most numerous on  
the eastern side. Young just able to fly were taken March 7.

All of the following specimens are referable to true *mexicana*.

16, ♂ ad., Chiricahua Mountains, March 6. Length, 7.10; extent,  
11.90; wing, 4; tail, 2.73; culmen, .87.

17, ♀ ad., same locality and date. Length, 7.10; extent, 11.80; wing,  
3.88; tail, 2.75; culmen, .85. "Iris dark brown. The jaw muscles were  
extraordinarily developed on the side toward which the lower mandible  
crossed."

24, ♀ ad., Chiricahua Mountains. March 7. Length, 6.80; extent,  
11.40; wing, 3.70; tail, 2.52; culmen, .81.

25, ♀ juv., first plumage, same locality and date. This bird had been  
out of the nest but a few days and the tips of the mandibles had not begun  
to cross.

116, ♂ juv., first plumage, Chiricahua Mountains, March 26. Length,  
6.90; extent, 12; wing, 4; tail, 2.75; culmen, .65. Wings and tail fully  
grown; mandibles decidedly crossed.

62. **Chrysomitris psaltria** (Say) Bp. ARKANSAS GOLD-FINCH.—“Common in only a few localities. I have not found much difference among the examples that occur here and have taken few that answered the description of var. *arizonæ*. California specimens are almost identical with those from New Mexico.”

130, ♂ ad., Chiricahua Mountains, March 30. Length, 4.50; extent, 7.80; wing, 2.65; tail, 1.90. “Iris brown.”

63. **Chrysomitris pinus** (Wils.) Bp. PINE FINCH.—Common among the Chiricahua Mountains.

20, ♂ ad., Chiricahua Mountains, March 7. Length, 5; extent, 8.90; wing, 2.91; tail, 2.20.

128, ♂ ad., Chiricahua Mountains, March 29. Length, 4.90; extent, 8.60; wing, 2.96; tail, 2.14; “Iris dark brown.”

64. **Poœcetes gramineus confinis** Baird. WESTERN GRASS FINCH.—“Common on prairies.”

The utility of recognizing this race of the Grass Finch seems to me questionable, although the western bird certainly possesses slight differential characters; these, however, are so largely comparative that they are difficult of adequate description, and any one attempting to determine examples by the books without the aid of large series of specimens, will be likely to abandon the task in despair.

158, ♀ ad., Sulphur Spring Valley, April 4. Length, 6.20; extent, 10.20; wing, 3.20; tail, 2.90.

164, ♂ ad., near Tombstone, April 5. Length, 6.40; extent, 10.80; wing, 3.35; tail, 3.04.

65. **Spizella socialis arizonæ** Coues. WESTERN CHIP-PING SPARROW.—Noted only at Cave Creek. “A large flock; they keep much among trees.”

11, ♂ ad., Cave Creek. March 5. Length, 5.50; extent, 8.90. “Iris dark brown; bill dark flesh color; legs pale brownish.”

66. **Spizella breweri** Cass. BREWER'S SPARROW.—Four specimens, all taken April 5, near Tombstone. Eight were killed by one shot into a flock which had gathered about a water-hole, but they were in such ragged plumage, owing to the progress of the spring moult, that half of them had to be thrown away.

67. **Junco oregonus** (Townsend) Scl. OREGON SNOWBIRD.—A single specimen obtained March 5, on Cave Creek.

68. **Junco cinereus caniceps**\* (Woodh.) Coues. GRAY-HEADED SNOWBIRD.

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\* In citing this and the next form as races of *cinereus*, I follow Mr. Henshaw, with whose views respecting the affinity of the three birds I fully agree.

10, ♂ ad., Cave Creek, March 5. Length, 6.20; extent, 9.20. Iris dark brown; bill and legs flesh color.

15, ♀ ad., same locality and date. Length, 6.30; extent, 9.

141, ♀ ad., Chiricahua Mountains, March 31. Length, 6.10; extent, 9.30. Iris dark brown.

69. **Junco cinereus dorsalis** (Henry) Henshaw. RED-BACKED SNOWBIRD.

108, ♀ ad., Chiricahua Mountains, March 26. Length, 6.50; extent, 9.50; wing, 3.05; tail, 3.18. "Not as plenty here as *J. cinereus*."

70. **Junco cinereus** (Swains.) Caban. MEXICAN SNOWBIRD. — Nine specimens, all taken during March, in the Chiricahua Mountains.

71. **Amphispiza bilineata** (Cass.) Coues. BLACK-THROATED SPARROW. — Mr. Stephens found this Sparrow on barren plains sparsely covered with low bushes; he considers it a permanent resident in Arizona.

*Juv., first plumage* ♂ (No. 613, Camp Lowell, June 28). Crown, lores, orbital region and sides of head generally, dull brownish-ash; a white superciliary line as in the adult; back faded brown with shaft-stripes of a darker shade on most of the feathers; wing-coverts and outer webs of inner secondaries, reddish-buff; beneath dull white with the breast and sides of the abdomen thickly but finely streaked with dull black.

In addition to the bird just mentioned the collection includes five adults from the following localities: San Pedro River (♂, Dec. 25); Sulphur Spring Valley (♂, April 4); Tucson (♀, May 3); Santa Rita Mountains (♀, May 20); Camp Lowell (♂, May 30).

72. **Peucaea cassinii** (Woodh.) Baird. CASSIN'S SPARROW. — Although special efforts were made to obtain specimens of this species, only one was secured during the trip. "The song of the male is peculiar; about midway it drops several notes and is finished on one key. Several others seen. They were all very wild."

159, ♀ ad., Sulphur Spring Valley, April 4. Length, 6.30; extent, 7.80; wing, 2.50; tail, 2.82. "Iris brown."

73. **Peucaea carpalis** Coues. RUFOUS-WINGED SPARROW. — Found sparingly about Tucson and Camp Lowell. It inhabited the mesquite thickets, keeping closely hidden in the bunches of "sacaton" grass, from which, when flushed, it flew into the branches above.

233, ♀ ad., Tucson, April 19. Length, 5.70; extent, 7.90; wing, 2.42; tail, 2.82.

234, ♂ ad., same locality and date. Length, 5.90; extent, 8; wing, 2.57; tail, 3. "Iris brown; bill dark brown above, paler below; legs pale brown."

432, ♀ ad., Tucson, May 25. Length, 5.80; extent, 7.80; wing, 2.46; tail, 2.75. With nest and three eggs.

442, ♂ ad., Tucson, May 27. Length, 5.80; extent, 8; wing, 2.58; tail, 3.

582, ♂ ad., Camp Lowell, June 24. Length, 5.90; extent, 8.20; wing, 2.55; tail, 2.91.

74. **Peucæa ruficeps boucardi** (Scl.) Ridg. BOUCARD'S SPARROW.—These Sparrows were met with at Cave Creek, near Morse's Mill, and in the Santa Rita Mountains. Among some notes taken at the first-named place I find the following: "I saw five of these Sparrows to-day [March 4] but two of them escaped me. They were in scrub-oaks on rocky hillsides, and were apparently mated. They acted somewhat like Wrens, hiding among the rocks and flushing from the grass at a point some distance beyond where I would mark them down. Two went into the low branches of the oaks, from which I easily shot them. I have not found the species before in Arizona, but I took several near Fort Bayard, New Mexico, in 1876." A specimen taken near the end of March was shot "on a ridge among thick brush," while two others, obtained in the Santa Rita Mountains in May, occurred at a high elevation on similar ground.

1, ♂ ad., Cave Creek, March 4. Length, 6.60; extent, 8.30; wing, 2.80; tail, 3.29.

2, ♀ ad., same locality and date. Length, 6.40; extent, 7.90; wing, 2.60; tail, 3.02.

3, ♂ ad., same locality and date. Length, 6.50; extent, 8.20. "Iris brown; legs pale flesh-color; bill dark bluish slate-color."

138, ♂ ad., Chiricahua Mountains, March 31. Length, 6.50; extent, 8.30; wing, 2.56; tail, 3.15.

387, ♀ ad., Santa Rita Mountains, May 16. Length, 6.10; extent, 8.10; wing, 2.58; tail, 2.95. "Iris brown; bill blackish above, light bluish below; legs pale flesh-color."

413, ♀ ad., Santa Rita Mountains, May 20. Length, 6.30; extent, 7.80; wing, 2.50; tail, 3.

The specimens enumerated above represent true *boucardi* and are readily separable from Texas examples by the characters which my friend Mr. Brown has lately pointed out\* in his diagnosis of the new race, *eremæca*.

75. **Melospiza fasciata fallax** Baird. WESTERN SONG SPARROW.—Rather common about Tucson where they haunted willow thickets and tall marsh grass near water.

258, ♀ ad., Tucson, April 21. Length, 6.30; extent, 8.20; wing, 2.60; tail, 2.98; culmen, .58. "Iris dark brown; bill dark above, light below; legs light brown. With nest and three eggs."

\* This Bulletin, Vol. VII, p. 26.



270, ♀ ad., Tucson, April 23. Length, 6.10; extent, 7.90; wing, 2.42; tail, 2.86; culmen, .54.

319, ♂ ad., Tucson, May 3. Length, 6.30; extent, 8.40; wing, 2.60; tail, 2.99; culmen, .55.

338, ♀ ad., Tucson, May 6. Length, 6.10; extent, 7.80; wing, 2.52; tail, 2.97; culmen, .53. "With nest and three eggs: set completed."

510, ♂ ad., Tucson, June 8. Length, 6.50; extent, 8.40; wing, 2.74; tail, 3.16; culmen, .52.

76. **Melospiza lincolni** (*Aud.*) *Baird*. LINCOLN'S FINCH. — "Common along streams" in March. Two specimens (Cave Creek, March 5).

77. **Passerella townsendi schistacea** (*Baird*) *Coues*. SLATE-COLORED SPARROW. — None were met with during 1881, but I have a specimen taken by Mr. Stephens near Tucson, in February, 1880.

78. **Pipilo maculatus megalonyx** (*Baird*) *Coues*. SPURRED TOWHEE. — Two males, Chiricahua Mountains, March 26 and 28. "Common in brush, usually along streams. They have a variety of calls, some of which resemble those of the Catbird. The song, uttered while the bird is sitting on a tree, sounds like *jack-jacksonii*."

The North American Towhees of the *maculatus* group are at present involved in much confusion. The trouble seems to be that each locality furnishes a race of its own which either possesses certain slight individual characteristics, or combines, in varying degrees, the characters of two or more recognized forms. The case, however, is not peculiar; for to a greater or less extent the same state of things obtains among the Song Sparrows, Shore Larks, and several other species, in which the forces of evolution are still actively working.

79. **Pipilo chlorurus** (*Towns.*) *Baird*. GREEN-TAILED TOWHEE. — Several specimens taken late in April. "Not common; usually found in low brush."

80. **Pipilo fuscus mesoleucus** (*Baird*) *Ridgw.* CAÑON TOWHEE. — "Common in rocky localities on plains, and in valleys." A nest containing three eggs was taken June 15 at a point about twenty-five miles north of Tucson. The eggs are grayish-white with numerous, short, zigzag lines of black about the larger end and occasional spots or dashes of brown and dull lavender scattered over the general surface of the shell. They measure respectively .91 X .69, .94 X .69, and .92 X .69. The nest, which was placed about four feet above the ground in a "cat-claw" mesquite, is firmly and rather compactly built of fibrous shreds

from the stalks of herbaceous plants, with a few twigs and whole stems supporting the outside, and a scanty lining of horse-hair. Its external diameter is about five inches; its depth two. The cavity is two inches wide and one and a half deep. Both nest and eggs differ somewhat from California examples of *crissalis* in my collection, the eggs being smaller and whiter, the nest softer and more compact.

177, ♂ ad., Tombstone, April 7. Length, 8.80; extent, 11.60. "Iris light brown."

186, ♀ ad., Tombstone, April 9. Length, 8.10; extent, 10.90; wing 3.50; tail, 4.15.

416, ♂ ad., Santa Rita Mountains, May 20. Length, 8.50; extent, 11.50; wing, 3.73; tail, 4.45.

81. **Pipilo aberti** *Baird*. ABERT'S TOWHEE. — "I have found this species common along the Colorado and Gila Rivers, and I took several on the San Pedro in December, 1880. They appear to be restricted to the vicinity of streams and usually to thick brush, although they frequent trees more than most of the members of this genus. I have seen them hunting insects in the bark of large trees in a manner similar to that of Wrens. They are rather shy. The usual note is a sharp chirp. The song is difficult to describe; it is rapid and near the middle rises to a higher key, quickly falling again and ending on the initial note. The nest is rather bulky; it is sometimes built in bushes near the ground, and again in trees. I found one in a bunch of mistletoe at a height of at least thirty feet."

A nest found May 28, at Tucson, was built on the top of a mesquite stump, where it was kept in place by the surrounding sprouts. It contained three fresh eggs which measure respectively .91 X .72, .92 X .72, and .90 X .71. They are elliptical in shape, and in the character and distribution of their markings they resemble the above described eggs of *P. mesoleucus* from which, however, they differ in having a faint but decided bluish cast. The nest is large and loosely built. It is composed mainly of broad strips or ribbons of bark with which are mingled small, pliant twigs and the green stems and leaves of the mesquite(?). The whole structure is homogeneous and, strictly speaking, it has no lining, but the materials surrounding the cavity are rather softer than the rest, while they are arranged with some regard to smoothness. The external diameter of this nest is about seven inches; its depth three. The cavity is three inches wide and two deep.

*Juv., first plumage* (No. 520, Tucson, June 10). Above uniform light brown; wing-coverts, outer edges of the inner secondaries and a narrow tipping on the tail, brownish-ochraceous; beneath brownish-fulvous with an ochraceous tinge on the throat, abdomen, and crissum, and a broad band of coarse but obscure black spots extending across the breast; head-markings as in the adult, but duller.

Eight specimens were collected. "Iris light brown; bill brownish horn-color above, bluish beneath; legs brown."

82. **Cardinalis virginianus igneus** (*Baird*) *Coues*. SAINT LUCAS CARDINAL. — Found only at Tucson, where it occurred sparingly in low brush, usually near streams.

269, ♂ ad., Tucson, April 23. Length, 9.40; extent, 12.40; wing, 4.12; tail, 4.92; longest feathers of crest, 1.35. "Iris dark brown; legs brown."

83. **Pyrrhuloxia sinuata** *Bonap.* TEXAN CARDINAL. — In the latter part of April three of these Cardinals were taken near Tucson, and several others were seen in the same place during March, 1880. They were found among mesquites, along brush fences and in the shrubbery of an arroya. "Iris dark brown; bill yellowish horn-color; legs pale brown. Food seeds, green buds and insects."

84. **Zamelodia melanocephala** (*Swains.*) *Coues*. BLACK-HEADED GROSBEAK. — Common at high elevations among the mountains.

367, ♂ ad., Santa Rita Mountains, May 13. Length, 8.10; extent, 12.90; wing, 4.17; tail, 3.75. "Iris dark brown; legs light plumbeous."

391, ♀ ad., Santa Rita Mountains, May 16. Length, 8.40; extent, 12.80; wing, 4.28; tail, 3.70.

In addition to being considerably larger than any of my more northern specimens, these examples are peculiar in having the interscapular feathers so broadly edged with brownish-orange (brownish-yellow in the ♀) that the back appears to be about equally streaked with light and dark color.

85. **Guiraca coerulea** (*Linn.*) *Swains.* BLUE GROSBEAK. — Only a few were seen during the present trip, but Mr. Stephens found them common on the Gila River in 1876. "They are late migrants."

445, ♂ ad., Tucson, May 28. Length, 7.20; extent, 11.10; wing, 3.60; tail, 3.27. "Iris dark brown; bill black above, bluish below; legs black."

86. **Passerina amoena** (*Say*) *Gray*. LAZULI BUNTING. — Two specimens, obtained April 25, at Tucson, are noted as "the first ones seen." One of them, a male, has the blue almost completely obscured by rufous, which forms a broad tipping on all the feathers of the upper parts. The throat, however, remains nearly pure blue.

87. **Calamospiza bicolor** (Townsend.) Bonap. LARK BUNTING.—Several large flocks were seen April 13, in the neighborhood of Tombstone. Most of the males were in parti-colored dress, not above one per cent having put on the black breeding-plumage. The stomachs of all which were killed contained "buds and seeds."

88. **Molothrus ater obscurus** (Gmel.) Coues. DWARF COWBIRD.

277, ♂ ad., Tucson, April 25. Length, 7.30; extent, 12.40; wing, 4.02; tail, 3.20. "Iris dark brown."

417, ♂ ad., Santa Rita Mountains, May 20. Length, 7.10; extent, 12.10; wing, 4.01; tail, 3.17.

89. **Agelaius phoeniceus** (Linn.) Vieill. RED-WINGED BLACKBIRD.

511, ♀ ad., Tucson, June 8. Length, 8.10; extent, 13.20; wing, 4.22; tail, 3.40.

90. **Icterus parisorum** Bonap. SCOTT'S ORIOLE.—Although this Oriole was oftenest seen among the foot-hills it occasionally occurred on the most barren plains, where it seemed content with the scanty shelter afforded by the cactus thickets. In the hill country it frequented the oak belt, and was seldom observed at a high elevation. During the breeding season it was seen near Tucson, as well as among the Santa Rita Mountains, but no nests were found in either locality.

*Juv., first plumage* (♀, No. 528, Tucson, June 14). Generally like the adult, but with all the wing-feathers edged and tipped with white, the wing-bands yellowish, the tail tipped with yellow, the breast obscured with brownish, and the yellow of the under parts paler and greener.

Only a small proportion of the males collected by Mr. Stephens have the adult plumage perfected. A female (No. 189, Tombstone, April 10) has a black throat-patch extending from the chin to the breast, and small, sagittate black spots on the crown.

"Iris dark brown; bill black, bluish at base below; legs dark bluish. Food, insects."

91. **Icterus cucullatus** Swains. HOODED ORIOLE.—An uncommon species, found only in the valleys, where it seemed to prefer cottonwoods to other trees.

The specimens taken are all adults, with the exception of a male which, although evidently a bird of the previous year, differs from the females only in having a black throat-patch and several concealed black spots on the interscapulars. One of the females is also peculiar in having many half-concealed black spots on the throat and jugulum. Some of the richest-colored males have the interscapular feathers tipped with yellow.

92. **Icterus bullocki** (*Swains.*) *Bonap.* BULLOCK'S ORIOLE.—Only two of these Orioles were taken during 1881; but in the previous summer Mr. Stephens found them not uncommon in the foot-hills of the Chiricahua Mountains.

93. **Corvus corax carnivorus** (*Bartr.*) *Ridgw.* AMERICAN RAVEN.—Incidentally mentioned as common about Tucson.

94. **Corvus cryptoleucus** *Couch.* WHITE-NECKED RAVEN.—A small proportion of the Ravens seen about Tucson were recognized as belonging to this species. Their notes differed widely from those of the common Raven, and "at times sounded somewhat like the quacking of a Duck."

324, ♀ ad., Tucson, May 4. Length, 19.90: extent, 40.70: wing, 14.06: tail, 8.94. "Iris dark brown."

95. **Cyanocitta stelleri macrolopha** (*Baird*) *Ridgw.* LONG-CRESTED JAY.—Five specimens, Chiricahua Mountains, March 24 to 26. "These Jays are common in the pines well up the mountain sides, but they are wary and difficult of approach. When pursued they fly from one tree to the lower branches of the next and jumping from limb to limb, take flight again as soon as they reach the top. If one can follow fast enough to get within range before the bird reaches the top of the tree he may obtain a shot, but it is necessary to keep behind some object while accomplishing this. They are noisy and have a variety of calls, some of which are disagreeably harsh. I think they are shyer here than in other localities where I have met with them." One of Mr. Stephens' specimens (No. 106) has the crest strongly tinged with blue, thus approaching var. *diademata* of Mexico.

96. **Aphelocoma woodhousii** (*Baird*) *Ridgw.* WOODHOUSE'S JAY.—One specimen, Galeysville, January 29, 1881.

97. **Aphelocoma sordida arizonæ** *Ridgw.* ARIZONA JAY.—Mr. Stephens met with this Jay in the Chiricahua and Santa Rita Mountains, and judging from the number of specimens obtained it must be rather abundant in both ranges. "They go in flocks of from five to twenty, and are generally seen in the foot-hills. They are restless, and in most localities shy, but around mills, where they congregate to feed on the grain in horse droppings, they become used to the presence of human beings and are more easily approached. Their food is chiefly broken acorns."

A nest found May 16, in the Santa Rita Mountains, is a bulky structure composed chiefly of yellowish rootlets with some coarse

dead twigs protecting its exterior and a scanty lining of fine grasses. The female was sitting on four eggs, which were on the point of hatching. The only specimen saved measures 1.13 X .82. It is pale greenish-blue, absolutely without markings, and closely resembles a Robin's egg. "The others were similar, as were three eggs of a set taken in 1876, and two of one found in 1880."

Of the fifteen specimens collected only four have the bill wholly black. With all the others there is more or less flesh-color, which, although usually confined to the base and tip of the lower mandible, sometimes spreads over nearly the whole of the bill below as well as encroaching on the maxilla at the tomia, and occasionally even occupies a narrow central space along the ridge of the culmen above the nostrils. Mr. Henshaw has remarked on this feature, which he considers peculiar to young birds. If this view be correct it must require several years for the bill to become unicolor.

98. **Eremophila alpestris chrysolaema** (Wagl.) Coues. MEXICAN SHORE LARK. — The only Shore Lark in the collection, a young bird in first plumage, taken on the plains at the base of the Santa Rita Mountains, has been referred by Mr. Ridgway to the above race.

99. **Tyrannus verticalis** Say. ARKANSAS FLYCATCHER. — Although this species was much less numerous than the following, especially after the spring migrants had gone, a few pairs were found breeding about Camp Lowell, where a nest containing three slightly incubated eggs was taken on June 20. The collection includes skins from Tucson and Camp Lowell.

100. **Tyrannus vociferans** Swains. CASSIN'S FLYCATCHER. — "Abundant in summer. Neither *verticalis* nor *vociferans* winters in Arizona." Specimens were collected at Tombstone, Tucson, and among the Santa Rita Mountains.

The peculiar attenuation of the primaries in this species has been freely commented on by authors, but no one seems to have noticed that this character, at least as applied in diagnoses, is to be found in only the *male* of *T. vociferans*. Nevertheless this is true of the somewhat large series of specimens before me, among which there is a decided and very constant sexual difference in the shape of the outer four primary feathers. All the adult males have them abruptly and deeply notched on the inner webs about half an inch from the tip, the emargination extending more than half-way to the shaft and reducing the width of the feather, terminally, to about .12 of an inch. In the females these feathers show no well-defined notching, the tips being simply tapered, usually with a slightly concave outline, although the outline is sometimes actually rounded. A young male from Riverside,

California (No. 6380, Sept. 19, 1881), taken during its first autumnal moult, has the old primaries (1-2) almost without attenuation, their tips being only slightly tapered, while the new ones (3-5) are as deeply notched as in any of the adults. Hence it is probable that males in first plumage will be found to have the primaries shaped like those of the female.

The sexes of *T. verticalis* differ in a similar manner but less markedly, for the first primary of the female, although broader than that of the male, usually has the same falcate shape. I have one or two females, however, which, by the wing characters alone, can with difficulty be distinguished from females of *vociferans*.

101. **Myiarchus mexicanus cooperi\*** (*Kaup*) *Baird*.  
COOPER'S FLYCATCHER. — This large *Myiarchus* which, as I lately announced,† Mr. Stephens has the credit of first finding within our boundaries, was ascertained to be a common summer resident about Camp Lowell. Of its occurrence in New Mexico, also, I now have positive evidence, a previously undetermined specimen, taken by Mr. Stephens near the Gila River, June 12, 1876, proving on comparison to be identical with the Arizona ones.

The collector's notes relating to the habits of this Flycatcher are disappointingly brief. It frequented low mesquites and was tame and rather noisy, having a variety of loud calls, some of which resembled those of *M. cinerescens*, while others were "almost Thrasher-like." Its food seemed to consist largely of beetles. On June 27 a nest was found at Camp Lowell. "Both parents were distinctly seen and positively identified. The nest was in an old Woodpecker's hole in a giant cactus about eighteen feet from the ground. It was lined with soft, downy weed-seeds, and contained two young just hatched and an addled egg." The egg, unfortunately, is so badly broken that accurate measurements are impossible, but an approximation would be  $1.04 \times .74$ . In ground-color and markings it closely resembles eggs of *M. crinitus*, the shell being a dull clayey-buff over which are numerous longitudinal lines and dashes of purplish-brown or lavender.

\* The question of the relationship which *M. cooperi*, *M. erythrocerus*, *M. mexicanus* and *M. crinitus* bear to one another, and that of the respective names which should be used for each, has been recently discussed at some length. (See Bull. U. S. Geolog. Surv., Vol. IV, pp. 32-33; *ibid.*, Vol. V, No. 3, pp. 402-404; Proc. U. S. Nat. Mus., Vol. I, p. 139; and *ibid.*, Vol. 3, pp. 13-15.) While I cannot claim to have personally investigated the points at issue, I am at present inclined to follow Mr. Ridgway's ruling, at least so far as *M. cooperi* is concerned.

† This Bulletin, Vol. VI, p. 252.

These markings are pretty evenly distributed, but are coarsest at the larger end of the egg.

462, ♂ ad., Camp Lowell, May 31. Length, 9.90; extent, 14.10; wing, 4.40; tail, 4.40; culmen, 1.15. "Iris brown; bill and legs black."

468, ♂ ad., Camp Lowell, June 1. Length, 10; extent, 14.30; wing, 4.35; tail, 4.44; culmen, 1.10.

472, ♂ ad., Camp Lowell, June 2. Length, 9.90; extent, 14.10; wing, 4.40; tail, 4.37; culmen, 1.27.

473, ♂ ad., same locality and date. Length, 10; extent, 14.20; wing, 4.40; tail, 4.60; culmen, 1.25.

491, ♂ ad., Camp Lowell, June 4. Length, 9.60; extent, 14.20; wing, 4.40; tail, 4.40; culmen, 1.13.

492, ♂ ad., same locality and date. Length, 9.80; extent, 14.30; wing, 4.38; tail, 4.49; culmen, 1.15.

558, ♂ ad., Camp Lowell, June 21. Length, 9.80; extent, 14.30; wing, 4.37; tail, 4.47; culmen, 1.16.

592, ♂ ad., Camp Lowell, June 25. Length, 9.80; extent, 13.80; wing, 4.23; tail, 4.35; culmen, 1.16.

463, ♀ ad., Camp Lowell, May 31. Length, 9.60; extent, 13.70; wing, 4.12; tail, 4.34; culmen, 1.10.

464, ♀ ad., same locality and date. Length, 9.50; extent, 13.60; wing, 4.16; tail, 4.32; culmen, 1.11.

493, ♀ ad., Camp Lowell, June 4. Length, 9.60; extent, 13.70; wing, 4.16; tail, 4.16; culmen, 1.10.

559, ♀ ad., Camp Lowell, June 21. Length, 9.40; extent, 13.40; wing, 4.04; tail, 4.10; culmen, 1.10.

591, ♀ ad., Camp Lowell, June 25. Length, 9.40; extent, 13.60; wing, 4.15; tail, 4.10; culmen, 1.12.

102. **Myiarchus cinerescens** *Lawr.* ASH-THROATED FLYCATCHER.—Specimens were obtained at Tombstone, Tucson, and Camp Lowell. In the latter locality the bird was common through June and was presumably breeding, although no nests were actually found. At all the points in Arizona where they were observed these Flycatchers frequented the timber in valleys and along streams, none being seen among the denser forests of the mountains.

103. **Myiarchus lawrencii** (*Giraud*) *Baird.* LAWRENCE'S FLYCATCHER.—This pretty *Myiarchus*, scarcely larger than our common *Phœbe*, was met with only among the Santa Rita Mountains, where it was apparently not uncommon, although its distribution seemed to be very local, most of Mr. Stephens' specimens being taken in a single cañon. They haunted the banks of streams, perching on dead limbs and taking frequent flights after insects. The only note heard was a short, mournful



"*peeúr.*" No nests were found, but a female shot May 17 was laying.

In my preliminary announcement\* of the occurrence of this species in Arizona I inadvertently gave the number of specimens as eight, whereas nine were really obtained. These show little variation in color or markings, but the females are slightly smaller than the males. The characters which separate *M. lawrencii* from its respective allies, *M. tristis* of Jamaica and *M. nigricapillus* of Central America, are well maintained in this series.

360, ♂ ad., Santa Rita Mountains, May 12. Length, 7.20; extent, 10.50; wing, 3.25; culmen, .76; tail, 3.38. "Iris dark brown; bill and legs black."

361, ♂ ad., same locality and date. Length, 7.20; extent, 10.30; wing, 3.25; culmen, .80; tail, 3.43.

364, ♂ ad., same locality and date. Length, 7.30; extent, 10.30; wing, 3.20; culmen, .80; tail, 3.35.

400, ♂ ad., same locality, May 17. Length, 7.10; extent, 10.20; wing, 3.20; culmen, .77; tail, 3.36.

412, ♂ ad., same locality. May 19. Length, 7.30; extent, 10.50; wing, 3.26; culmen, .82; tail, 3.32.

388, ♀ ad., same locality, May 16. Length, 7.10; extent, 10; wing, 3.20; culmen, .81; tail, 3.20.

401, ♀ ad., same locality, May 17. Length, 7; extent, 10; wing, 3.05; culmen, .74; tail, 3.05.

402, ♀ ad., same locality and date. Length, 7.10; extent, 10.

403, ♀ ad., same locality and date. Length, 7; extent, 9.80; wing, 3.10; culmen, .85; tail, 3.16. "Laying."

104. **Sayiornis sayi** (Bonap.) Baird. SAY'S PEWEE.— "Common on prairies; usually found singly, perching on weed-stalks. They do not frequent timber. "Iris dark brown; bill and legs black." Several specimens collected.

105. **Sayiornis nigricans** (Swains.) Bonap. BLACK PEWEE.— Found more or less abundantly along streams, but rarely at a great elevation in the mountains. "The nest is similar to that of *S. fusca*, and is built under bridges or sometimes in deserted dwellings. Iris dark brown; bill and legs black." Several specimens taken.

106. **Contopus borealis** (Swains.) Baird. OLIVE-SIDED FLYCATCHER.— Two specimens were obtained in May in the Santa Rita Mountains, where it was "not very common."

107. **Contopus pertinax** Caban. COUES'S FLYCATCHER. 392, ♀ ad., Santa Rita Mountains, May 16. Length, 7.70; extent, 12.50; wing, 4.12; tail, 3.30; culmen, .78. "Iris dark brown; bill black above, yellow below with dusky tip; legs black."

\* This Bulletin, Vol. VI, p. 252.

108. **Contopus virens richardsoni** (*Swains.*) *Coes.*  
WESTERN WOOD PEWEE.

371, ♂ ad., Santa Rita Mountains, May 13. Length, 6.40; extent, 10.70.  
"Iris dark brown; bill black above, dusky below."

109. **Empidonax flaviventris difficilis** *Baird.* WESTERN  
YELLOW-BELLIED FLYCATCHER.

Both of the following specimens are more decidedly ochraceous than are my California examples, the latter, like many Pacific Coast birds, showing a closer approach to the eastern form. *Difficilis*, however, seems to be a pretty strongly characterized race, if not, as Mr. Ridgway has lately ranked it, a distinct species.

484, ♂ ad., Camp Lowell, June 3. Length, 5.50; extent, 8.10; wing, 2.60; tail, 2.46.

517, ♀ ad., Tucson, June 10. Length, 5.50; extent, 8.10; wing, 2.46; tail, 2.52.

110. **Empidonax pusillus** (*Swains.*) *Baird.* LITTLE  
FLYCATCHER. — A common bird about Tucson, where it inhabited willow thickets near water. Numerous nests were taken: the one sent me is a loosely woven structure composed chiefly of dry grasses, with a neat lining of horse-hair. It agrees closely with northern New England nests of *E. trailli*, and like them differs widely from the compact, Yellow-Warbler-like nests which *trailli* builds in the region about Columbus, Ohio, and at St. Louis, Missouri.\*

The series of skins is a full one, and the specimens uniformly sustain the characters ascribed to *pusillus*, a race which seems to me quite as constant as many which have been regarded with less suspicion and disfavor.

111. **Empidonax hammondi** (*Xantus*) *Baird.* HAM-  
MOND'S FLYCATCHER.

172, ♀ ad., near Tombstone, April 12. Length, 5.40; extent, 8.90.

237, ♂ ad., Tucson, April 19. Length, 5.40; extent, 8.70.

363, ♀ ad., Santa Rita Mountains, May 12. Length, 5.30; extent, 8.30.

No. 237 has the outer web of the external rectrices as white as in average specimens of *E. obscurus*. I have Colorado examples also which cannot be separated from *obscurus* by this character alone.

112. **Empidonax obscurus** (*Swains.*) *Baird.* WRIGHT'S  
FLYCATCHER. — This species was noted only in the vicinity of Tombstone, where a few were found early in April among scattered clumps of trees.

The four specimens collected have the lower mandible pale orange.

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\* See this Bulletin, Vol. I, pp. 14-17 and 75-76, and Vol. V, pp. 20-25.

passing into dusky at the tip, and in this respect differ from some more northern ones in which the part is flesh-color.

113. **Empidonax fulvifrons pallescens** *Coues*. BUFF-BREASTED FLYCATCHER.—A single specimen from the Santa Rita Mountains is accompanied by the following remarks: "Rare here; more numerous in the Chiricahua Mountains last season [1880]; and rather common near Fort Bayard, New Mexico, in 1876. One of its notes is a chirp similar to a Warbler's."

395, ♂ ad., Santa Rita Mountains, May 17. Length, 5.10; extent, 7.90. "Iris dark brown; bill black, yellow below; legs black."

114. **Pyrocephalus rubineus mexicanus** (*Scl.*) *Coues*. VERMILION FLYCATCHER.—This beautiful species was found at Cienega Station in April; near Tucson and among the Santa Rita Mountains during May; and about Camp Lowell in early June. In all these localities it was abundant among undergrowth, usually near water. "Their motions resemble those of other Flycatchers, excepting that they have a habit of poising over one spot for several seconds at a time, maintaining their position by a rapid fluttering of the wings very nearly in the manner of a Sparrow Hawk."

A nest taken April 25, at Tucson, was placed in the horizontal fork of a stout mesquite branch to which it was attached in such a manner that its upper surface was flush with that of the embracing supports. This nest is composed outwardly of small twigs, and is lined with horse and cow hair and a few feathers. It entirely lacks the exterior coating of lichens spoken of by Dr. Merrill,\* but in other respects it agrees well with his description of the Fort Brown (Texas) specimen. The three eggs which it contained are creamy white with rounded blotches of brown and pale lilac wreathed about their larger ends. They measure respectively  $.72 \times .53$ ,  $.71 \times .53$ ,  $.70 \times .52$ . Mr. Stephens found other nests similar in construction and position to the present one. He considers three eggs the full complement.

*Imm., first plumage*, ♂ (No. 6153 (Coll.'s No. 466) Camp Lowell, June 1). Above similar to the adult female, but with the rump golden-brown; the wing-coverts and outer webs of the secondaries, brownish-fulvous; and the feathers of the occiput, nape and interscapular region tipped with brownish-white; beneath white with a tinge of lemon-yellow on the

\* Proceedings U. S. Nat. Mus., Vol. I, p. 142.

sides and crissum; the breast and sides of the abdomen thickly marked with rounded spots of clear brown.

The series of adults is a very full one and includes several interesting styles of plumage. Some of the males have the brown of the back mixed with ashy, which has a tendency to form a collar on the nape, and gives the interscapular region a patched appearance. In others the red of the under parts as well as that of the crown is replaced by orange; while one specimen has a large patch of lemon-yellow on the right side of the breast, which shows in striking contrast with the otherwise clear carmine of the lower surface. These variations present a curious analogy to certain similar ones which occur in the Scarlet Tanager and Summer Red-bird.

115. **Ornithium imberbe ridgwayi**. *var. nov.* RIDGWAY'S BEARDLESS FLYCATCHER.

Ch. Sp. ♂ *Similis O. imberbi*, sed rostro robustiore; colore obscuriore ac magis cinerario.

Adult ♂ (No. 6000, author's collection — collector's No. 313. Tucson, May 1, 1881. F. Stephens). Above ashy brown; crown nearly pure brown in decided contrast with the back; rump pale brown with a faint olive tinge; wings and tail brown, edged with ashy-white; greater and middle wing-coverts tipped with fulvous, forming two wing-bars; edge of wing and under wing-coverts pale lemon-yellow; lores and sides of head posteriorly, ashy; a narrow frontal line continued backward above and nearly around the eye, ashy-white; under parts ash, shading posteriorly to ashy-white on the belly, and with the faintest possible lemon tinge on the jugulum and crissum; bill stout; upper mandible much curved, brown; under mandible slightly curved, brown at tip, brownish-orange at base; commissure reddish-orange.

*Dimensions.* Length, 4.60; extent, 7.20; wing, 2.23; tail, 1.96; culmen, .42; tarsus, .56; depth of bill at nostrils, .15.

Adult ♀ (No. 6133, author's collection — collector's No. 446. Tucson, May 28, 1881. F. Stephens). Smaller than the male, slightly more yellowish below and with a faint tinge of olive on the back.

*Dimensions.* Length, 4.50; extent, 6.70; wing, 2.04; tail, 1.78; culmen, .40; tarsus, .52; depth of bill at nostrils, .14.

*Juv., first plumage*, ♂ (No. 6138, author's collection — collector's No. 451. Tucson, May 29, 1881. F. Stephens). Crown plumbeous; back olive-brown; wing and tail-coverts, outer edges of secondaries, and a broad tipping on all the rectrices, dull brownish-chestnut; beneath delicate ashy-buff, shading to yellowish-white on the belly and crissum; bill orange, dusky at tip of upper mandible.

*Habitat*, Arizona.

The chief points of difference between the above race and *imberbe* proper may be briefly expressed as follows:

*O. imberbe*. — Depth of bill at nostrils, .11 to .13. Above olivaceous-ash; entire under parts strongly tinged with lemon-yellow.

*O. imberbe ridgwayi*.—Depth of bill at nostrils, .14 to .15. Above ashy-brown; beneath ash or ashy-white with scarcely any yellowish.

In the present connection I have examined seven specimens of *O. imberbe*. Five of these, from the collection of the National Museum, represent the following localities: Texas (Rio Grande Valley), Mexico (Mazatlan and Tehautepec) and Yucatan (Merida). The remaining two, in my own cabinet, were taken at Lomita Ranch, Texas, in March, 1880. The result of a careful comparison of this material is that the Texas examples prove to be identical with those from Mexico and Central America, while the Arizona birds differ very constantly from all the others in respect to the points mentioned above. The entire series is, of course, a small one, but its evidence seems sufficient to warrant the varietal separation of the Arizona form.

The detection of this Flycatcher in Arizona is perhaps the most interesting discovery resulting from Mr. Stephens' late trip. *O. imberbe* has only recently been added to our fauna by Mr. Sennett, and the locality of his single specimen—Lomita, Texas—was so far beyond the previously known range of the species that its occurrence seemed hardly likely to prove more than a mere accident. In 1880, however, Mr. M. A. Frazar secured additional specimens at Lomita, and now an allied, but apparently distinct race, turns up in Arizona.

Mr. Stephens found the curious little bird only at Tucson, where his first specimen was taken April 28. Afterwards others were shot in the same locality, but they were by no means common. The males had a habit of perching on the tops of the tallest trees in the vicinity of their haunts, and at sunrise occasionally uttered a singular song which Mr. Stephens transcribes as "yoop-yoop-yoopéedeedledèè, the first half given very deliberately, the remainder rapidly." A commoner cry, used by both sexes in calling to one another, was a shrill "pièr pièr pièr pièr, beginning in a high key and falling a note each time." They were very shy, and specimens were obtained only at the expense of much trouble and perseverance. Their loud calls were frequently heard, but when the spot was approached the bird either relapsed into silence or took a long flight to resume its calling in another direction. In their motions they resembled other small Flycatchers, but their tail was less frequently jerked.

On May 28 Mr. Stephens met with a young bird which had but just left the nest. It was accompanied by the female parent, who showed much solicitude and frequently uttered her shrill cries, to which the offspring responded in nearly similar tones. Both

individuals were secured, but neither the nest nor the remainder of the brood — if indeed there were any more — could be found. On the following day this episode was repeated, a second female being found in attendance on another young bird of nearly the same age as that obtained on the previous occasion.

308, ♂ ad., Tucson, April 29. Length, 4.80; extent, 7.20; wing, 2.28; tail, 2.04; culmen, .40; tarsus, .55. "Iris dark brown; bill black, basal half of lower mandible reddish-brown; legs black. Contents of stomach worms and insects."

313, ♂ ad., Tucson, May 1. Length, 4.60; extent, 7.20; wing, 2.23; tail, 1.96; culmen, .42; tarsus, .56.

446, ♀ ad., Tucson, May 28. Length, 4.50; extent, 6.70; wing, 2.04; tail, 1.78; culmen, .40; tarsus, .52. Parent of the next.

447, ♂ juv., first plumage, same locality and date.

450, ♀ ad., Tucson, May 29. Length, 4.30; extent, 6.80. Parent of the following.

451, ♂ juv., first plumage, same locality and date.

116. **Trochilus alexandri** Bourc. & Muls. BLACK-CHINNED HUMMINGBIRD. — The first specimen met with was a female which, with a nest and two eggs, was taken at Tucson on April 23. The species was also found breeding among the Santa Rita Mountains, as well as near Camp Lowell. At all these points it was decidedly the most abundant of the Hummingbirds.

Six of the seven examples collected are females, and Mr. Stephens remarks on the apparent absence of the males during the breeding season.

The nest just mentioned, and another obtained April 28 in the same locality, are now in my possession. Both were built in willows, one being saddled on a small branch, while the other rested lightly in the fork of a slender twig. Their construction is homogeneous, the only material used being a creamy-white down, probably from willow catkins. One nest, however, has a few delicate, faded leaves attached to its exterior. The eggs are indistinguishable from those of *T. colubris*. The first set was fresh, the second slightly incubated.

117. **Calypte costæ** (Bourc.) Gould. COSTA'S HUMMINGBIRD.

289, ♀ ad., Tucson, April 26. Length, 3.70; extent, 4.60. "Iris dark brown; bill and legs black."

294, ♂ im., Tucson, April 27. Length, 3.55; extent, 4.52. This specimen lacks the ruffs of the adult male, but has a patch of violet feathers on the centre of the throat.

118. **Selasphorus platycercus** (Swains.) Bonap. BROAD-  
TAILED HUMMINGBIRD.

366, ♂ ad., Santa Rita Mountains, May 13. Length, 4; extent 5.50.  
"Iris dark brown; bill black; feet black, their soles lighter."

385, ♂ ad., Santa Rita Mountains, May 15. Length, 4.70; extent, 5.90.

119. **Iache latirostris** (Swains.) Elliot. BROAD-BILLED  
HUMMINGBIRD.—From the known fact of its occurrence among  
the Chiricahua Mountains, as ascertained by Mr. Henshaw in  
1874, it was of course to be expected that this Hummer would  
eventually be found, under similar conditions, in other parts of  
Arizona, a probability which Mr. Stephens has confirmed by  
the capture of five specimens in the Santa Rita Mountains. In  
addition to these, several others were seen at various times dur-  
ing his short stay in that range, and I infer from his notes that the  
birds were not uncommon there. They were always found near  
water, and usually along the streams which flowed through  
cañons, high among the mountains. They seemed to prefer syc-  
amores to other trees, and invariably perched on dead twigs  
where they could command an open view. "Their notes were  
flat and differed from those of other Hummers."

356, ♂ ad., Santa Rita Mountains, May 12. Length, 4.10; extent, 5.05;  
wing, 2.11; bill, .91. "Iris dark brown; point of bill below, with terminal  
third above, black; rest of upper mandible reddish-brown; of lower, pur-  
plish-red; feet black."

365, ♀ ad., Santa Rita Mountains, May 13. Length, 3.95; extent, 5.05;  
wing, 1.98; bill, .92. "Bill above, and its tip below, black; remainder of  
lower mandible reddish. Not near laying."

382, ♂ ad., Santa Rita Mountains, May 14. Length, 4; extent, 5.02.

405, ♂ ad., Santa Rita Mountains, May 18. Length, 3.88; extent, 4.98;  
wing, 1.99; bill, .88.

411, ♀ ad., Santa Rita Mountains, May 19. Wing, 2.03; bill, .90.

120. **Cypselus saxatilis** Woodh. WHITE-THROATED SWIFT.  
—In some notes made at Cave Creek, under date of March 4,  
Mr. Stephens incidentally refers to this Swift as follows: "We  
camped here last night chiefly for the purpose of investigating  
some caves said to contain large quantities of bird-droppings. I  
went to one of the largest of these to-day and found the floor  
covered with tons of bat droppings as well as a little from birds.  
There were also a few feathers (primaries and rectrices) of  
*Cypselus saxatilis* and some of *Falco sparverius*."

121. **Antrostomus vociferus arizonæ** Brewster. STEPH-  
ENS' WHIP-POOR-WILL.—During 1881 this Whip-poor-will was

again met with in Arizona among the Santa Rita Mountains, where, however, it was less numerous than it had been in the Chiricahua range in 1880. The only specimen obtained was an adult male which was shot, by moonlight, in oaks near a stream.

Through Mr. Stephens' kindness I am now enabled to present descriptions of the female and egg alluded to in a letter quoted in connection with the original description\* of the race.

Adult ♀ (6309, author's collection, Chiricahua Mountains, Arizona, July 4, 1880. F. Stephens). General coloring similar to that of the male, but lighter, the ground tints more ochraceous; the white of the tail replaced by reddish-fulvous which forms a narrow tipping on the outer three pairs of rectrices; the tawny gular crescent continued around the sides of the neck, the ends meeting behind and forming an uninterrupted collar.

*Dimensions.* Length, 9.60; extent, 18.80; wing, 6.27; tail, 5.03; culmen, .80; tarsus, .70; longest rectal bristle, 1.40.

This specimen differs even more widely from the female, than does my type from the male of *A. vociferus*. The ochraceous of the lores, superciliary-stripe, and neck-collar, spreads over the entire plumage both above and beneath, giving it a tawny tinge which overlies and obscures the usual dark markings. On the shoulders, breast, lores and throat this color deepens to a fine reddish-chestnut, and elsewhere it replaces the ashy, dirty white and other light tints of the eastern birds. In its general coloring the plumage strikingly resembles that of the brown phase of *Scops asio kennicotti*. The ochraceous neck-collar is also present in the male from the Santa Rita Mountains, but it is less distinctly defined, being somewhat obscured, especially on the nape, by dusky mottling. In all other respects this example agrees closely with my type.

The egg is white with a dull gloss. At first sight it appears to be immaculate, but a closer inspection reveals a few faint blotches of the palest possible purple, so faint indeed that they might pass for superficial stains were it not for the fact that they underlie the external polish. The absence of well-defined markings may probably be explained by the assumption that the bird had laid one or more clutches earlier in the season, thus exhausting her supply of coloring pigment. The specimen measures 1.17X.87.

355, ♂ ad., Santa Rita Mountains, May 11. Length, 9.90; extent, 18.70; wing, 6.50; tail, 5.15; culmen, .76; tarsus, .70; longest rectal bristle, 1.73.

(To be continued.)

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\*This Bulletin, Vol. VI, pp. 69-72.



NOTES UPON THE OSTEOLOGY OF *CINCLUS MEXICANUS*.

BY R. W. SHUFELDT.

It has never been my good fortune to enjoy the opportunity of studying the habits and manners of our American Dipper in its native haunts, but this seems to have been due more to my ill-luck, than to any neglect on my part to seize upon every chance to visit the localities where this bird, one that I have so often longed to see alive, certainly should have occurred; I refer to the rocky, mountain streams that course down the gorges of the Big Horn Mountains and the Laramie Hills. Many a time I have scrambled alone up through the rocky cañon that marked the bed of one of these noisy, bounding torrents with the vain hope of finding *Cinclus*, but, like many a naturalist before me, I was obliged to leave the country where these birds undoubtedly occur without ever having seen one of them. So that of my own personal experience I have nothing to add, so far as its life history is concerned, to the many beautiful descriptions of this bird given in our standard ornithologies, familiar to all lovers of the science, and to those read in its literature.

Of skins of *Cinclus* I have examined many a score, as has every one who from time to time has gone through large collections, but the very nearest, the most intimate acquaintance that I can boast of ever having made with this little bird, was with a pair and three young that had been stowed away by themselves in alcohol for several years in the large collection at the Smithsonian Institution. Of this material I was kindly allowed to avail myself, or of so much of it at least as was necessary to develop the facts that I now have the pleasure of presenting to my reader in this paper.

I did very little with the viscera, and this part of its anatomy has been laid aside for some future study, my attention having been directed more particularly to the skeleton, and to the extremely interesting points that it presented for consideration. These I shall endeavor to describe, as minutely and elaborately as the limits of this article will permit, at the same time sup-

pressing as many of the technicalities in terms, as is compatible with exactness, and in accord with the tastes of those who have not devoted themselves especially to anatomical reading and work.

In studying the skeletons of birds, or of anything else for that matter, the student must keep the fact ever present in his mind, that the great value of such studies and the descriptions that may follow them, rests almost entirely upon the comparisons that he makes; the more carefully and minutely he compares the form he may have under consideration with nearly related forms, the greater will be the value of his results; to this end tend all the studies of biologists of the present day.

With respect to the skull of *Cinclus*, our space will not permit us to enter upon the engaging part of the subject as to the mode of formation of this part of the skeleton in the adult from the many segments found in the cranium of the chick, it being enough for us to say that the usual bones ossify, unite, and leave the ordinary ones free, as the pterygoids, the ossa quadrata, and the lower jaw. The superior mandible is drawn out into a sharp point, and the bony nostril on either side occupies considerable space, being long and elliptical in outline; as in all nearly related genera these apertures are not separated by a bony partition or septum, but below we detect a delicate vomer in the median plane.

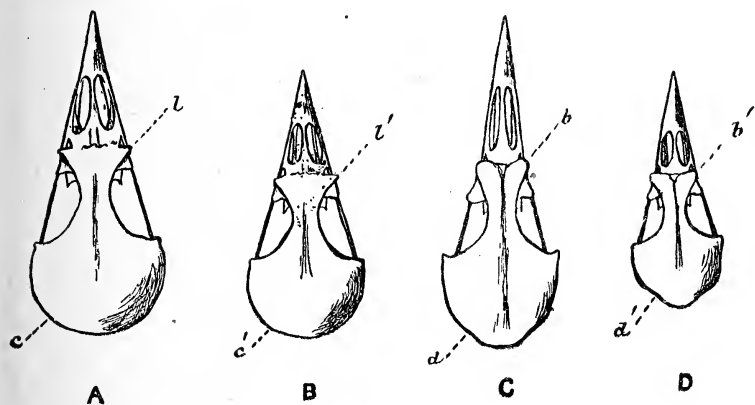
The eye-cavities or orbits are well shut off from the nasal chambers beyond them by broad bony walls composed of the usual elements, and here each is of a quadrate figure, as seen in so many genera of birds. The upper and outer angles of these osseous partitions are rounded. The almost complete separation existing between the two cavities just referred to by no means exists between the orbits themselves, for here we find an extremely deficient septum, and a large aperture leading into the brain-case at the usual site of the exit of the nasal nerves, the openings for the optic nerves being circular and entire.

On the inferior aspect of the skull we find maxillo-palatines, of a more or less spongy composition, existing between maxillaries and the delicate palatines, which latter are slightly bent downwards from the horizontal plane. The pterygoids are very slender, and articulate in the usual manner with the quadrates and the palatines.

The external form of the brain-case is more or less globular, the supra-occipital prominence being well developed behind. Above in the median line a shallow furrow is carried forward as far as the fronto-maxillary suture.

There is but little of interest to note in the lower mandible, to illustrate the points we have in view.

From this slight sketch of this part of the skeleton we are prepared to look a little into how *Cinclus* compares with other forms of near kin. The writer, to illustrate his remarks, offers the student the four accompanying cuts of the superior aspects of the skulls of birds chosen with the view of showing the comparable points.



A is of *Oreoscoptes montanus*. B of *Sialia mexicana*. C of *Cinclus* itself, and D of *Siurus naevius*.

In the figures, the angle formed at *l*, *l'*, *b*, and *b'* is due to the lachrymal bone on that side; viewed from above in such forms as *Sialia*, *Turdus grayi*, *Oreoscoptes*, *Hylocichla unalascae*, and no doubt *Merula* and *Mimus*, less so in *Harporhynchus*, this projection is markedly angular; while in *Siurus*, the Wrens, and rather less so in *Anthus*, it is rounded, as shown in *Siurus* and also in *Cinclus* itself.

Of the forms we have examined, *Siurus* appears to be closer to the Dipper in this respect than any other genus, the Wrens (*Salpinctes*) next, and *Anthus* next. This also applies to the manner in which the median furrow at the summit of the cranium approaches the fronto-maxillary suture, also shown in C

and D in the cuts, this feature in the opposed forms mentioned above occupying a position between the superior orbital margins.

There is still another very marked distinction among the birds we have thus far compared, and that is in the general external form of the brain-case proper. A and B show the form assumed by the genera we mentioned above in connection with them; smooth, large, and globular, all indicating the possession of a brain of no mean size as compared with the owner. In *Cinclus*, *Siurus*, and the *Troglodytinæ* the prominence of the supra-occipital eminence causes depressions to exist at *d* and *d'* that are not present in A and B at *c* and *c'*.

With regard to this last characteristic the outline assumed by *Siurus* seems to claim the nearer place, over the other forms mentioned.

So much for the skull, and the writer must reluctantly and with as good grace as possible allow the student to observe other interesting points of difference for himself, though he would be only too glad to assist him in this part of the skeleton.

There are fourteen cervical vertebræ in *Cinclus*, the last two bearing each a pair of free ribs, the ultimate pair possessing uncinate processes; this arrangement holds good in *Siurus* and *Salpinctes*, but we remember that in *Eremophila*\* we found only thirteen cervical vertebræ; the number of ribs varied however. *Cinclus* also possesses, in common with the form mentioned, four dorsal ribs; these are connected with the sternum by sternal ribs, the first sacral vertebra possessing an additional pair, but its sternal ribs only articulate along the hind border, on either side of the true sternal and last pair. This condition obtains, we know, in very many birds.

If we do not include the pygostyle or last coccygeal vertebræ, we observe that *Cinclus* has *seven* caudal vertebræ, *Siurus* and *Salpinctes* each only *five*, *Oreoscoptes* having *six*, so that the number of these segments may vary more or less among the genera we have quoted above.

The general pattern of the pelvis of the Dipper, the Wrens, the Thrushes, and *Sialia* is pretty much the same for all, that is it would be very hard to point out decided differences among them upon casual examinations; of course they are proportionate

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\* See Bull. U. S. Geol. Surv., Vol. V, Art. 5.

in size to that of their respective owners, and we might, in extensive series of each, by exceedingly careful measurements, detect relative differences. These remarks cannot be applied to the genus *Harporhynchus*, as the pelvis there has a very striking form, best expressed by saying that it is more angular than the others cited, the processes are more pronounced and sharper. In *Cinclus*, as in other forms noted, the bone is broad across, with the distal extremities of the pubic bones and ischia flaring well outwards; the ilio-neural canals open; the sacral vertebræ very broad, with numerous foramina or openings existing among them.

What we have just said in regard to the pelvis applies with equal force to the shoulder girdle and sternum; indeed, this latter bone is singularly alike among the various genera that I have referred to; the shape it assumes is that described by Professor Owen in his *Anatomy of Vertebrates*, as the "Cantorial sternum," it being the pattern allotted to the vast majority of the class *Aves*. In front we find the manubrium bifurcated, and supported upon a stout and produced base, directed upwards and outwards. The body behind is 1-notched, the lateral xiphoidal processes thus formed having dilated ends. The keel is deep, convex below, sharp and concave in front, forming an acute carinal angle at the point of meeting. The costal processes are very lofty, broad and directed forwards, having the facets for the sternal ribs placed along their posterior borders, which meet on either side the xiphoidal borders at a very obtuse angle. The "merry-thought" of *Cinclus* is delicately formed, having expanded upper extremities and a median plate below.

Our subject has, in addition to the usual number of bones in the pectoral limb, quite a sizable sesamoid, to be found at the back of the elbow; this bonelet is likewise found in *Oreoscoptes* and may be a common character of other birds we have mentioned. The arm seems to be completely non-pneumatic, indeed I have failed to find the apertures for the entrance of air in any of the bones composing it. Several months ago my attention was directed to a note, I think in the Proceedings of the Zoölogical Society of London, in which some English observer says the same of the European Dipper. This non-pneumatic condition of the long bones, not only of the upper but also of the lower extremities, seems to hold good among all the other forms and genera we have thus far referred to in this article.

The proximal extremity of the *humerus* is very much expanded, and rather abruptly bent in the direction of the bird's body, the member being considered in a position of rest. The "crest" we know curls over the usual site of the pneumatic fossa, which depression is divided by a bony partition from a lesser cavity above. This characteristic is also more or less strongly marked in the Rock Wren, *Siurus*, and others, and is feebly shown in *Harporhynchus*.

The articular cavity of the shoulder joint is increased in the Dipper by a good sized *os humero-scapulare*, a sesamoid that we are aware is to be found among other orders.

We will present the reader here with a table showing the relative lengths, etc., of some of the bones we have thus far examined, in order that a study of their comparative development may be made. (The measurements are given in centimeters.)

Species.	Sternum.		Humerus.	Radius and ulna.	Hand.	Long axis of skull.
	Length from bifurcation of manubrium to end of body.	Depth of keel.				
<i>Cinclus mexicanus</i> .	2.7	0.8	2.2	2.6	2.6	4.4
<i>Siurus naevius</i> .	1.9	0.6	1.7	2.1	1.7	3.1
<i>Salpinctes obsoletus</i> .	1.6	0.5	1.7	2.0	1.7	3.6
<i>Oreoscoptes montanus</i> .	2.3	0.7	2.2	2.7	2.4	4.2
<i>Sialia mexicana</i> .	2.3	0.8	2.0	2.8	2.3	3.5
<i>Anthus ludovicianus</i>	2.1	0.7	1.8	2.5	2.1	2.9
<i>Merula migratoria</i> .	3.4	1.1	2.9	3.4	—	—
<i>Hesperocichla naevia</i> .	3.0	1.6	2.5	3.1	3.1	4.6

A great many points of extreme interest and of the highest importance reward the ornithotomist's study of the pelvic limb of *Cinclus*; some of these the writer has already remarked upon in papers now in press, but he offers them here again, confident of the fact that they will be of interest to ornithologists generally,

particularly to those whose aim it is to pursue the study more than "skin deep."

In the adult Dipper the pelvic limb, as far as its skeleton is concerned, is made up of the most usual number of bones; the thigh having the *femur*, the leg the *tibia* and *fibula*, a *patella*, the tarsus the bone *tarso-metatarsus*, and finally a foot arranged upon the plan of four toes, with first, second, third, and fourth digit composed of 2, 3, 4, and 5 joints respectively.

I have already said that these bones are non-pneumatic, they are also of lengths proportionate to the size of the bird, the claws being curved about as much as they are in a typical Thrush. Anatomists have described certain general points for examination on these long bones composing the leg; many of these are present, but we shall only call the student's attention to a few of them, so as to make clear what we have to point out hereafter. Nothing of striking variance marks the femur, as distinguishing it from the common form of the bone among birds of this class. The same might be said of the tibia, but we must note the two large flaring processes at the anterior and upper end of this, the larger bone of the leg; in this bone, too, the condyles are well developed below. The *tarso-metatarsus*, or the bone of the tarsus, we observe in the old bird, has rather a slender shaft, presenting for examination at its upper end the usual dilatation, crowned by a smooth, undulating surface to articulate with the tibia; behind this, at the same end, we find a tuberosus process that has given comparative anatomists no little trouble to name; but we will speak of this further on. The lower end of the *tarso-metatarsus* has the little lateral facet for the diminutive first tarsal bone, and the three trochleæ for the other toes.

Let us now, after this brief survey of the bones in the adult take up the young of this species. We find first that the femur has grown in the usual manner, its lower end bearing the two large condyles has been formed by one epiphysis which included both of these articulate surfaces. Nothing of particular interest is to be observed in the development of the fibula or the small "splint bone" of the leg. The superior end of the tibia has been formed by the epiphysis including the two large processes that I spoke of above. These plates are called the *procnemial* and the *ectocnemial* processes, the inner and outer one respectively. They are turned slightly outwards, springing abruptly

from the shaft in the adult, very much as I figured them in *Lanius*.

Such of my readers as have read my account of the development of *Centrocerus* in the Osteology of the *Tetraonidae*, will remember what we had to say in regard to the lower end of the tibia and its growth, and also all that Professor Morse has done for us in that direction. The specimen we have of the young of *Cinclus* does not admit of the demonstration of the *intermedium*; the *fibulare* and the *tibiale* seem to ossify separately, however. We must admit, then, that in this instance we are no nearer solving the problem of the homologies of the avian tarsal segments than we were before, but a little light at least is thrown on the subject when we come to examine the next bone, the tarso-metatarsus.

In nearly all birds this bone has at the back part of its upper end a tuberos process, amalgamated with the shaft in the adult, that assumes various forms in different members of the class. This bony process has long been regarded with suspicion, as to whether it was one of the ankle or rather tarsal bones or not. Let us hear what a few of the authorities have to say in this matter. Professor Owen tells us in Vol. II of his *Anatomy of the Vertebrates*, when speaking in general terms of this process, that: "One or more longitudinal ridges at the back of the upper end of the metatarsal are called 'calcaneal'; they intercept or bound tendinal grooves which, in some instances, are bridged over by bone and converted into canals; the ridges may be expanded and flattened." This would lead one to think that the Professor *might* regard this process as the homologue of the os calcis, a tarsal bone.

Professor Huxley, in his *Anatomy of Vertebrated Animals*, page 254, tells us, in speaking of this process, that: "Again in most birds, the posterior face of the proximal end of the middle metatarsal, and the adjacent surface of the tarsal bone, grow out a process, which is commonly, but improperly, termed 'calcaneal.'" The inferior surface of this *hypo-tarsus* is sometimes simply flattened, sometimes traversed by grooves or canals, for the flexor tendons of the digits."

Mivart says, when referring to birds: "Thus no projection corresponding with the tuberosity of the os calcis exists in this compound bone." (*Elementary Anatomy*, p. 206.)



Coues, in his Osteology of *Colymbus torquatus*, leaves no doubt in our mind how he regards this projection of the tarso-metatarsus; this author says:—"The process of bone representing the *os calcis*, rises at the superior end of the bone, on its posterior aspect, as a very conspicuous crest."

Professor Morse, in his Tarsus and Carpus of Birds (Ann. Lyc. Nat. Hist., N. Y., Vol. X, 1872), speaks of the centrale, but not in connection with this process.

In the chick of *Centrocercus* I found that the *centrale* did not include this process, consequently in my Osteology of the *Tetraonidæ* (Bull. U. S. Geol. Surv., Vol. VI) I declared that this process had nothing whatever to do with the *os calcis*, and in the osteology of *Lanius*, termed it the *tendinous* process, from the fact that the flexor tendons in so many birds either pass over or through it. Now our young of *Cinclus mexicanus*, just before it leaves the nest, has its metatarsal bones still ununited, and crowned by a *separate* segment that has apparently ossified from one single centre, a segment that not only includes the *centrale*, but the entire process of which we have been speaking. So between *Cinclus* and *Centrocercus* we must still look for other forms to throw light upon this problem. The subject is an extremely engaging one for the ornithologist to look into and investigate.

The shaft of the tarso-metatarsus of this bird develops after the usual rule set forth in works upon the subject, and the same may be said of the phalanges.

The writer only hopes that his sketch, necessarily brief, and far from being exhaustive, will have at least the tendency to induce other ornithologists to record their observations upon this subject whenever the opportunity offers.

Our studies, as far as we have carried them, seem to point pretty conclusively to the fact that our American Dipper is quite closely related to the genus *Siurus*, and not far removed from some of the Wrens.

## LIST OF BIRDS OBSERVED AT HOUSTON, HARRIS CO., TEXAS, AND IN THE COUNTIES MONTGOMERY, GALVESTON AND FORD BEND.

BY H. NEHRLING.

(Concluded from p. 175.)

152. *Ægialites vociferus* Bonap. KILLDEER PLOVER.\* — Common resident throughout the year, but most abundant during the spring and fall migrations.

153. *Ægialites semipalmatus* Bonap. SEMIPALMATED OR RING PLOVER. — Rare and only observed during migrations.

154. *Ægialites wilsonius* Ord. WILSON'S PLOVER. — Common during the breeding season, but I did not succeed in finding a nest.

155. *Streptilas interpres* Illig. TURNSTONE. — Seen on Galveston Bay and on the Gulf Coast.

156. *Recurvirostra americana* Gmel. AVOCET. — Winters, but not noticed in summer.

157. *Gallinago wilsoni* Bonap. WILSON'S SNIPE. — Common during migrations; arriving from the north usually in the middle of October, sometimes earlier, sometimes later. I think none remain here to breed, and all go farther south to winter. The time of arrival from their winter quarters is unknown to me.

158. *Tringa maculata* Vieill. JACK SNIPE; GRASS SNIPE. — Common in September and again in April. None remain to winter or to breed.

159. *Tringa minutilla* Vieill. LEAST SANDPIPER. — Not uncommon in winter.

160. *Actiturus bartramius* Bonap. BARTRAMIAN SANDPIPER; UPLAND PLOVER. — Abundant on the prairies during March and April and again in October. None remain to breed or to winter.

161. *Limosa fœda* Ord. MARBLED GODWIT. — Rare; seen only in March and October.

162. *Totanus semipalmatus* Temm. WILLET; TATTLER. — This well-known bird is also common in this region in all suitable localities. Resident throughout the year; breeds.

163. *Numenius longirostris* Wils. LONG-BILLED CURLEW. — Common during migrations; occasionally seen during the breeding season.

164. *Tantalus loculator* Linn. WOOD IBIS. — This bird is common in all marshy localities near the Gulf Coast. I have seen it frequently in the marshes and ponds near Spring Creek and the Brazos, in company with Herons and other water fowl.

165. *Platalea ajaja* Linn. ROSEATE SPOONBILL. — Common in the breeding season. Never seen in companies, but always singly, associated

\* Of *Grallatores*, *Lamellirostres*, etc., I can give only a very incomplete list, as I have never had favorable opportunity to observe these birds.

with Herons, Ducks, etc. Particularly common on the prairie ponds in the northern part of Harris County, Texas.'

166. *Ardea herodias* Linn. GREAT BLUE HERON. — Quite regularly distributed, but nowhere common; breeds on trees near ponds in the woods.

167. *Herodias egretta* Gray. WHITE HERON; GREAT WHITE EGRET. — Abundant summer resident; breeds. This beautiful bird is to be observed in numbers in all the prairie ponds. They breed in communities on bushes in swamps. The nests are bulky, built of sticks; the nesting cavity is very flat; eggs three or four in number. The birds begin to breed in the latter part of April.

168. *Garzetta candidissima* Bonap. SNOWY HERON; LITTLE WHITE HERON. — Exceedingly abundant during a large part of the year. I have seen these birds by thousands in the marshes near the Brazos River and on the Gulf Coast. Large colonies breed in the marshes near Spring Creek, where they build their nests on bushes, or, more frequently, in the lower horizontal branches of forest trees, bordering ponds and marshes. None remain to winter.

169. *Florida cœrulea* Bd. LITTLE BLUE HERON. — This beautiful bird is exceedingly abundant in all suitable localities. Many are resident throughout the year, but most migrate further south in winter. They nest in large colonies in swamps and marshes overgrown thickly with bushes. I have always found the nest in the top of button-bushes (*Cephalanthus occidentalis*). Eggs three or four, in one case five, in number. I have seen hundreds of nests in one pond. They are built entirely of sticks without any lining. In the second week of May many eggs were already hatched.

170. *Butorides virescens* Bonap. GREEN HERON. — Common summer resident; breeds; never observed in flocks, but always in pairs or singly.

171. *Hydranassa tricolor ludoviciana* Ridgw. LOUISIANA HERON. — One specimen, shot May, 1880, on Spring Creek. Seems to be not very common. Breeds in the swampy woods.

172. *Nyctiardea grisea nævia* Allen. BLACK-CROWNED NIGHT HERON. — Not common and very shy. Breeds in the swamps where other Herons have their nests.

173. *Botaurus lentiginosus* Steph. AMERICAN BITTERN. — Occurs during migrations; none observed in the breeding season or in winter.

174. *Ardetta exilis* Gray. LEAST BITTERN. — Common during migrations; rare in summer; breeds in the marshes of tule reeds and water shrubs, such as *Cephalanthus occidentalis* and *Pinckneya pubescens*, in company with Herons and other water fowl.

175. *Grus americana* Temm. WHOOPING CRANE. — From November to the end of March these beautiful birds are exceedingly abundant on all the low prairies in the vicinity of Houston. Very shy.

176. *Grus canadensis* Temm. SANDHILL CRANE. — Even more abundant than the preceding. Observed flocks of many hundreds on the low prairies in the western and northern parts of Harris County. Very shy.

177. *Porzana carolina* Bd. CAROLINA RAIL; SORA. — Seen in summer; breeds, but I have not discovered the nest.

178. *Porzana noveboracensis* Cass. LITTLE YELLOW RAIL.—Very rare during migrations.

179. *Porzana jamaicensis* Cass. LITTLE BLACK RAIL.—One taken April 29, 1879.

180. *Gallinula galeata* Bonap. FLORIDA GALLINULE.—Common during the breeding season in all marshes where reeds, and bushes grow, but especially so where the magnificent *Nymphaea odorata* (Water-Lily) opens its fragrant flowers, and where *Nuphar advena* (Yellow Pond Lily) and another beautiful aquatic, *Nelumbium luteum* (Water Chinquepin), are found; over the broad leaves of which plants the little Florida Gallinule runs with exceeding quickness, searching for water insects and other food.

181. *Fulica americana* Gmel. AMERICAN COOT; MUD HEN.—Decidedly more numerous than the preceding. Especially common in the large prairie swamps.

182. *Cygnus buccinator* Rich. TRUMPETER SWAN.—Every winter there are large numbers on Galveston Bay and on the Gulf of Mexico near the coast.

183. *Cygnus americanus* Sharp. AMERICAN or WHISTLING SWAN.—Sometimes these birds winter abundantly on Galveston Bay.

184. *Anser hyperboreus* Pall. SNOW GOOSE; WHITE BRANT.—Exceedingly abundant on Galveston Bay, also on the rivers and bayous near the Gulf Coast in winter.

185. *Anser albifrons gambeli* Coues. AMERICAN WHITE-FRONTED GOOSE.—This is the first Goose to arrive from the north in autumn, but they all migrate farther south.

186. *Bernicla canadensis* Boie. CANADA GOOSE.—Exceedingly abundant during winter. Large flocks are to be observed on the wet prairies in company with Cranes.

187. *Anas boscas* Linn. MALLARD.—Very common during migrations and in winter.

188. *Anas obscura* Gmel. BLACK DUCK; DUSKY DUCK.—Common during the breeding season. A pair of these Ducks are seen in almost every pond among Herons, Roseate Spoonbills, Anhingas, Gallinules, and Blackbirds (*Agelaius phoeniceus*).

189. *Dafila acuta* Bonap. PINTAIL DUCK.—Common during migrations.

190. *Chaulelasmus streperus* Gray. GADWALL.—Exceedingly abundant during winter.

191. *Mareca americana* Steph. AMERICAN WIDGEON.—Common during migrations.

192. *Querquedula carolinensis* Steph. GREEN-WINGED TEAL.—Very common in autumn and spring, rather rare in winter.

193. *Querquedula discors* Steph. BLUE-WINGED TEAL. Very common during migrations but all pass further south.

194. *Querquedula cyanoptera* Cass. CINNAMON TEAL.—Not common during migrations; none remain to winter.

195. *Spatula clypeata* Boie. SHOVELLER; SPOON-BILL DUCK.—Abundant in winter.

196. *Aix sponsa* Boie. WOOD DUCK; SUMMER DUCK. — Common during migrations; some remain to breed. \*
197. *Fulix marila* Bd. SCAUP DUCK. — Common in winter on Galveston Bay.
198. *Fulix affinis* Bd. LITTLE BLACK-HEAD. — Very common in winter.
199. *Aythya vallisneria* Boie. CANVAS-BACK. — Abundant in winter on Galveston Bay and on all marshy districts near the Gulf Coast.
200. *Bucephala albeola* Bd. BUTTER-BALL; BUFFLE-HEAD. — Abundant in winter near the coast.
201. *Erismatura rubida* Bonap. RUDDY DUCK. — Very common during migrations; none remain to winter, but many breed.
202. *Pelecanus erythrorhynchus* Gmel. AMERICAN WHITE PELICAN. — Common during winter, especially near the coast.
203. *Pelecanus fuscus* Linn. BROWN PELICAN. — Common during the breeding season on all the rivers, creeks, and bayous near the coast.
204. *Plotus anHINGA* Linn. AMERICAN ANHINGA; SNAKE BIRD; "WATER TURKEY." — Breeds in all marshy localities and is very common.
205. *Larus atricilla* Linn. LAUGHING GULL. — Abundant near the Gulf Coast; breeds on the small sand islands in Galveston Bay.
206. *Sterna anglica* Montag. GULL-BILLED TERN. — Breeds abundantly on the islands of Galveston Bay.
207. *Sterna regia* Gambel. ROYAL TERN. — Breeds in considerable numbers on the islands of Galveston Bay.
208. *Sterna cantiaa acuflavida* Ridgw. CABOT'S TERN, and —
209. *Sterna forsteri* Nutt. FORSTER'S TERN. — These and a few other Terns breed in abundance on the islands near the coast, especially on the sand bars of Galveston Bay, where they lay their eggs on the bare sand. It was impossible for me to distinguish the eggs, as the birds all leave the nests as soon as they are approached.

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## NOTES ON SOME BIRDS COLLECTED BY CAPT. CHARLES BENDIRE, AT FORT WALLA WALLA, WASHINGTON TERRITORY.

BY WILLIAM BREWSTER.

THE following paper is based on a collection of about two hundred and fifty birds obtained in the immediate vicinity of Fort Walla Walla during the autumn and winter of 1881-82, and submitted to me for determination by Capt. Bendire, who has kindly consented to my publishing any notes respecting them, that seem of sufficient interest.

As an exponent of the workings of geographical variation in species easily modified by their surroundings, this material is especially instructive. The region represented apparently constitutes a sort of neutral ground between the Pacific and Middle Provinces and naturally its fauna is a mixed one. Setting aside species not subject to geographical modification, and migrants from the north which have only an indirect bearing on the general question, we find the collection divisible into three classes: (1) Forms identical with or most nearly like Pacific coast types; (2) Forms about intermediate between representatives inhabiting the Pacific and Middle Provinces; (3) Forms to a certain extent intermediate between Pacific and Middle Province representatives, but differing from both in certain original characteristics. The locality seems to be nearly lacking in typical representatives of the Middle Province; and its fauna, on the whole, must be regarded as closely related to that of the coast region.

The third class, although least numerous, includes many of the most interesting birds. The majority of these are resident forms, a fact which sufficiently explains many of their peculiarities, for it is well known that sedentary species are, of all others, the most subject to local variation.

But while the philosophic bearing of this material is not doubtful, there are certain systematic difficulties in the way of its satisfactory presentation. I refer to the *naming* of these intermediate forms. The practice has been to use the name of the race to which the bird seems most nearly related, and this I have been forced to adopt in default of a better way. But the method obviously fails to meet the requirements of such cases, while to a certain extent it is unscientific and inaccurate. The evil, however, is not likely to be remedied, for it is difficult to conceive of a system of nomenclature that would adequately designate the numberless intermediate and local types.

In the present connection I would gratefully mention the assistance received from my friend, Mr. Ridgway, who, during my study of the collection, has given me every facility for examining the matchless series in the National Museum, and to whom I am further indebted for many valuable suggestions. My obligations to Capt. Bendire are greater than I can adequately express, for, in addition to other kind attentions, he has generously

presented me with many valuable specimens included among those about to be discussed.

LIST OF SPECIES AND VARIETIES REPRESENTED IN THE COLLECTION.

- |   |  |
|---|--|
| 1. <i>Turdus migratorius</i> .*                 | ✓ 27. <i>Picus pubescens gairdneri</i> .           |
| ✓ 2. <i>Turdus migratorius propinquus</i> .     | ✓ 28. <i>Melanerpes torquatus</i> .                |
| ✓ 3. <i>Sialia arctica</i> .                    | ✓ 29. <i>Colaptes auratus hybridus</i> .*          |
| 4. <i>Myiadestes townsendi</i> .                | 30. <i>Colaptes auratus mexicanus</i> .            |
| 5. <i>Regulus satrapa olivaceus</i> .           | ✓ 31. <i>Ceryle alcyon</i> .                       |
| ✓ 6. <i>Parus atricapillus occidentalis</i> .   | ✓ 32. <i>Asio americanus</i> .                     |
| 7. <i>Telmatodytes palustris paludicola</i> .   | 33. <i>Asio accipitrinus</i> .                     |
| 8. <i>Anthus ludovicianus</i> .                 | 34. <i>Scops asio kennicotti</i> .†                |
| ✓ 9. <i>Lanius borealis</i> .                   | ✓ 35. <i>Bubo virginianus subarcticus</i> .‡       |
| ✓ 10. <i>Ampelis garrulus</i> .                 | ✓ 36. <i>Bubo virginianus saturatus</i> .          |
| 11. <i>Ampelis cedrorum</i> .                   | 37. <i>Nyctea scandiaca</i> .                      |
| ✓ 12. <i>Hesperophona vespertina</i> .          | 38. <i>Falco columbarius suckleyi</i> .            |
| 13. <i>Chrysomitris tristis</i> .               | ✓ 39. <i>Falco richardsoni</i> .                   |
| 14. <i>Passerculus sandvicensis alaudinus</i> . | ✓ 40. <i>Falco sparverius</i> .                    |
| ✓ 15. <i>Zonotrichia gambeli intermedia</i>     | 41. <i>Accipiter fuscus</i> .                      |
| ✓ 16. <i>Spizella monticola ochracea</i> .†     | 42. <i>Astur atricapillus</i> .                    |
| ✓ 17. <i>Junco oregonus</i> .                   | ✓ 43. <i>Astur atricapillus</i> var. —? §          |
| ✓ 18. <i>Melospiza fasciata guttata</i> .       | 44. <i>Buteo borealis calurus</i> .                |
| 19. <i>Pipilo maculatus megalonyx</i> .‡        | ✓ 45. <i>Buteo swainsoni</i> .                     |
| ✓ 20. <i>Agelæus phæniceus</i> .                | ✓ 46. <i>Archibuteo lagopus sancti-johannis</i> .  |
| ✓ 21. <i>Sturnella neglecta</i> .               | 47. <i>Archibuteo ferrugineus</i> .                |
| 22. <i>Scolecophagus cyanocephalus</i> .        | 48. <i>Zenaidura carolinensis</i> .                |
| 23. <i>Corvus americanus</i> .§                 | ✓ 49. <i>Bonasa umbella sabinii</i> .              |
| ✓ 24. <i>Pica rustica hudsonica</i> .           | ✓ 50. <i>Pediæcetes phasianellus columbianus</i> . |
| ✓ 25. <i>Cyanocitta stelleri annectens</i> .    | ✓ 51. <i>Charadrius dominicus</i> .                |
| 26. <i>Eremophila alpestris</i> .               |  |

\* Typical; the occurrence of both forms seems at first thought anomalous, but *migratorius* may be a migrant from Alaska, where it is the representative bird.

† *Var. nov.* See page 228 of this number.

‡ Nearly typical, but showing slight approaches to var. *oregonus*.

§ Typical, and not approaching var. *caurinus* of the coast-region.

|| Typical.

\* One specimen, with a complete red nuchal band.

† See my late paper on this Owl (this Bulletin, Vol. VII, pp. 27-33). Six examples in the present collection offer no new points affecting the position there taken.

‡ Slightly aberrant; see remarks under *B. saturatus* (p. 230).

§ See remarks under *A. atricapillus* (pp. 231, 232).

## SPECIES AND VARIETIES CALLING FOR SPECIAL CONSIDERATION.

6. *Parus atricapillus occidentalis* (Baird) Coes. OREGON CHICKADEE.—A series of six specimens furnishes satisfactory proof—which I believe has been heretofore wanting—that *P. occidentalis* is simply a dark, geographical race of *P. atricapillus*. One example is absolutely typical of *occidentalis*, while the others grade evenly into a form that is essentially undistinguishable from *atricapillus*. Indeed the lightest colored specimen is so nearly like some Massachusetts birds taken at the same season that I have been unable, after a most careful comparison, to detect the slightest difference in either color or markings; the wing of the Walla Walla skin, however, is slightly shorter. There are no apparent approaches in this series to *P. septentrionalis*.

16. *Spizella monticola ochracea* var. nov. WESTERN TREE SPARROW.—Ch. Subsp. ♂ ♀ Similis *S. monticolæ*, sed colore suprâ dilutior; strigis dorsalibus rarioribus, angustioribus et magis acutè in tergo pallidiorè depictis; lateribus gulâque magis ochraceis; vertice, in autumnalibus quidem avibus, sæpissimè magis cinereo.

♂ (Fort Walla Walla, Washington Territory, Nov. 8, 1881. Capt. Bendire.) Back and rump pale sandy-brown or brownish ochraceous, the back with sharply defined black streaks which, excepting on the scapulars, have no chestnut bordering; crown invaded centrally, from the nape, by a broad space of pale ash which tinges most of the feathers to their bases and confines the usual chestnut to a small area on the forehead and two narrow, lateral stripes; lores and sides of head pale fulvous; entire under parts washed with warm ochraceous, deepest on the sides and abdomen, palest on the throat where it only partially conceals the ashy beneath. Otherwise similar to *S. monticola*.

*Dimensions.* Wing, 2.94; tail, 2.73; culmen, .43.

*Habitat.* Western North America, east to Dakota, north to Arctic Ocean: Alaska?

The specimen above described differs widely from its nearest approaches among my eastern examples. The ground-color of the back is decidedly paler, bringing out the dark streaks in sharper contrast, which is heightened by the absence of their usual chestnut edging; the ash of the throat and sides of the head is much fainter, and in many places replaced by brownish-fulvous; the under parts, especially the sides and abdomen, are more strongly ochraceous; and the broad, ashy crown-patch gives the head a very different appearance.

Upon testing these characters by comparison with the extensive material in the National Museum, I find the different ground-color and markings of the back to be constant in western birds, while the ochraceous tint of the throat and sides of the head, although most conspicuous in fall and winter specimens, is also a good distinction; the ashy hood is apparently confined to autumnal birds, and with these is variable in extent, as well as sometimes wanting; but as it *never* occurs in eastern examples it is not wholly lacking in diagnostic value.



A comparison of measurements taken from a large number of specimens of both races shows little average difference in size, although the western birds usually have smaller and narrower bills.

18. *Melospiza fasciata guttata* (Nutt.) Ridgw. RUSTY SONG SPARROW. — The thirteen Song Sparrows sent me from Fort Walla Walla represent a form very nearly intermediate between *fallax* and *guttata*. Most of these specimens are decidedly browner above and more heavily streaked beneath than true *fallax*; but on the other hand none of them are as dark as typical *guttata*, although several closely approach that form. One of the lighter examples is even grayer than a Utah skin, and, taken by itself, would necessarily be referable to *fallax*. But the series as a whole may perhaps best be referred to *guttata*.

25. *Cyanocitta stelleri annectens* (Baird) Ridgw. BLACK-HEADED JAY. — An interesting series of Jays collected by Capt. Bendire includes five typical representatives of *annectens*, two nearly typical *stelleri* and four birds about intermediate between these forms. The differential characteristics of the three styles may be briefly given as follows: The first-named has a well-defined and conspicuous patch of white over the eye; the second entirely lacks this marking; the third has it merely indicated by a narrow gray line. In all, the crest is glossy black; the rest of the head, with the breast anteriorly, plumbeous-black; the back plumbeous-brown; and the throat streaked with bluish-white. All have the head above more or less streaked with blue, but the shade and extent of this marking bear no apparent relation to the presence or absence of the white patch over the eyes. Thus examples of each style have the forehead and crown, to a point half an inch behind the eye, thickly marked with blue or bluish-white, while with all there is a more or less complete gradation from this pattern to one in which a few pale streaks are confined to the forehead. Similarly, the greater wing-coverts are distinctly barred with black, faintly crossed with fine dark lines, or entirely immaculate, without regard to the character of the features already mentioned.

The above evidence clearly goes to show that *annectens* grades directly into *stelleri*; but it does not necessarily preclude the recognition of the former as a well-defined geographical race, for the locality under consideration abounds in similarly intermediate forms.

33. *Asio accipitrinus* (Pall.) Newton. SHORT-EARED OWL. — A female, taken Oct 7, has the ground-color of the plumage, both above and beneath, rich, almost rusty, ochraceous; the markings, also, are unusually dark and broad. Three males represent the other extreme, their coloring, especially beneath, being remarkably pale and almost free from any ochraceous tinge.

36. *Bubo virginianus saturatus*\* Ridgw. DUSKY HORNED OWL. — During the autumn of 1881 Great Horned Owls were unusually abundant

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\* As Mr. Ridgway has lately pointed out, Cassin's *pacificus* was clearly based on specimens of *subarcticus*, a very distinct race first recognized by Hoy in 1852. Hence the name *pacificus* must give place to *saturatus*, proposed by Mr. Ridgway for "a northern littoral form, of very dark colors."

about Fort Walla Walla, and Capt. Bendire secured no less than fourteen specimens, of which twelve are now before me. In a general way these are referable as follows: eight to *saturatus*, two to *subarcticus*, and two to a form apparently about intermediate between these races. Five of the representatives of *saturatus* are typical, while the remaining three grade into the intermediate form which, in turn, approaches one of the light specimens referred to *subarcticus*. The latter example is not typical, but its companion differs from an Arizona skin only in having slightly darker dorsal markings and a little stronger rufous cast about the face and across the breast, the color and markings elsewhere being essentially the same.

The occurrence of these three forms together is not remarkable, for two of them may reasonably be regarded as migrants from distant and probably widely separated regions. The third possibly represents a resident type, but on this point I have no direct evidence.

38. *Falco columbarius suckleyi*? Ridgw. BLACK MERLIN. — A beautiful adult male Pigeon Hawk, taken at Fort Walla Walla Oct. 18, 1881, presents such a puzzling combination of characters that, after carefully comparing it with all the material available, I am still at a loss for a definite opinion regarding its precise identity or relationship. It most closely resembles highly colored, autumnal adults of *F. columbarius*, but the under parts, excepting the throat and a small central space on the abdomen, are rich rusty-ochraceous — almost orange-chestnut on the breast and tibiae, while the usual cinereous above is intensified on the back to a nearly pure plumbeous; the markings of the under parts, also, are unusually coarse and numerous. In these respects it agrees with a bird in the National Museum from Santa Clara, California, but it differs from this specimen, as well as from every other adult that I have seen, in having the outer webs of all the primaries, excepting the first two, conspicuously marked with rounded spots of pale ochraceous.

With *F. richardsoni* it cannot be consistently associated, for the adult, as well as the young of that species, always has six distinct light bars on the tail, while the example under consideration possesses but five. Moreover, the adult male of *richardsoni* is very much lighter colored than the adult of *columbarius*, whereas the present bird is decidedly darker. The adult of *suckleyi* is unknown, but we should expect to find it, like the young, with sparse, inconspicuous spotting on the lining of the wings. In the Walla Walla bird these markings are as numerous and well-defined as in *columbarius*.

Taking all these considerations into account, and bearing in mind the unstable character of so many of the types furnished by this locality, it seems most reasonable to assume that Capt. Bendire's specimen represents the adult plumage of a form which, although referable to *suckleyi*, is more or less intermediate between that race and true *columbarius*. But additional material must be forthcoming before the question can be definitely settled.

39. *Falco richardsoni* Ridgw. RICHARDSON'S MERLIN. — Of this well-marked species the collection contains two immature females, dated

respectively Oct. 13 and Oct. 21, 1881. Neither of these calls for any special comment, but I take the present opportunity to characterize the adult plumage of the male, which apparently has not been previously described.\*

*Falco richardsoni*, adult ♂ (author's collection, Colorado Springs, Colorado, C. E. Aiken). Above pale ashy-blue, most of the feathers of the back, as well as the inner secondaries and many of the scapulars, with fine, black shaft-lines; crown tinged with ochraceous (probably wanting in the highest conditions of plumage), the black shaft-lines here very numerous, each feather being conspicuously marked; forehead and sides of head light ochraceous, the former with narrow black streaks, the latter with broader brownish ones; a well-defined nuchal collar of rusty-ochraceous with darker mottling; secondaries and primary coverts concolor with the back, but with light bars on their inner webs; primaries plumbeous-brown, margined with bluish-white and marked conspicuously on both webs with the same color, the markings on the inner webs being pure white and extending in transverse bars from the shaft to the edge of the feather, those of the outer webs ashy-white and in the form of conspicuous, rounded or quadrate spots; tail crossed by five dark and six light bars, the last of the latter terminal and pure white, the others more or less bordered by pale ashy-blue; all of the dark bars clear black excepting the basal two, which, on the central rectrices, are nearly uniform with the back, but decidedly darker than the light ones with which they alternate; throat pure white and immaculate; remainder of under parts pale ochraceous, deepest on the tibiae and crissum, where it is decidedly tinged with rusty; feathers of the breast, abdomen, flanks and sides with median stripes of clear reddish-brown, these stripes broadest on the flanks (where they are sometimes actually transverse), narrowest across the anterior part of the breast, and everywhere with fine but inconspicuous dark shaft-lines; crissum entirely unmarked; under tail-coverts and tibiae with conspicuous shaft-lines of dark brown; edges of wings pale ochraceous; under wing coverts white, barred with reddish-brown; all the markings of the primaries showing distinctly on their under surfaces. *Dimensions*. Wing, 8.21; tail, 5.18; culmen (from cere), .50.

Were further proof wanting to establish this Falcon's specific distinctness from *F. columbarius*, the difference in the adult plumage of the two would settle the question. The adult male of *F. richardsoni* has the mantle almost as light as that of a Herring Gull, while the conspicuous ashy-white spots on the outer webs of the primaries and the six light tail bands constitute equally well-marked characters. The specimen above described is essentially similar to five examples in the National Museum.

42. *Astur atricapillus* (Wils.) Bonap. AMERICAN GOSHAWK.—The present collection includes four Goshawks, one an adult male, the remain-

\*The supposed adult, described by Mr. Ridgway in the "History of North American Birds" (Vol. III, p. 148), proves to be an immature bird in its second year. The real adult, however, was figured in the second edition of this work.

ing three young, or at least immature, birds in brown plumage. The adult is absolutely identical with Massachusetts specimens, and must be considered typical *atricapillus*. Two of the young agree well with Mr. Ridgway's description of young *striatulus*,\* but the third does not have the markings either darker or more extensive than do several of my New England examples, and the dorsal feathers have an even broader light (ochraceous) edging; the under parts, also, are strongly ochraceous, while the stripes on the flanks are neither cordate nor transverse. The latter characters, however, are probably worthless for they occur in a Tyngsboro (Mass.) bird.

Without going further into details I may sum up my conclusions as follows: (1) That two of Capt. Bendire's specimens (the adult and the young bird just mentioned) are undistinguishable from typical *atricapillus*; (2) That the other two examples (both young or immature) differ from eastern birds in having broader, more linear black markings beneath and a narrower light edging on the feathers above, and are probably referable to a form more or less distinct from *atricapillus*; (3) That true *atricapillus* ranges westward at least to Fort Walla Walla, Washington Territory; (4) That *striatulus*, as at present defined, is a doubtfully tenable variety.

I am not at liberty to pursue the subject further, for I understand that Mr. Nelson is about to propose a new Pacific coast race which occurs, at least as a migrant, in the Western United States, and upon the young of which Mr. Ridgway apparently based his description of young *striatulus*.†

49. *Bonasa umbella sabinii* (Dougl.) Coues. OREGON RUFFED GROUSE. — The series of Ruffed Grouse embraces twelve specimens, all from the immediate vicinity of Fort Walla Walla. These birds apparently represent a dark, or more properly speaking, non-rufescent phase of *sabinii*, corresponding to the gray phase of *umbella*, and bearing the same relation to typical *sabinii* that the Walla Walla *Scops* does to what has been considered typical *S. kennicotti*. This peculiar plumage may be characterized as follows:

*Gray phase*; adult ♂. Above with the ground-color clear, dark ash, nearly uniform and unmixed with reddish even on the wings and tail; throat and breast tinged with reddish-yellow; remainder of under parts white, occasionally with a trace of ochraceous; markings as in typical *sabinii*.

The above description is taken from a bird which probably represents the extreme gray condition, all the others having more or less reddish-brown on the upper parts, especially on the back and wings, although the tail is usually clear ashy. Two specimens, however, show a decided ap-

\* "Darker (brownish-black) markings prevailing in extent over the lighter (nearly clear white) ones. Stripes beneath broad, brownish-black; those on the flanks cordate and transverse."

† The type of the adult *striatulus* has turned out to be merely a light-colored, faintly marked example of *atricapillus*.

proach to what may now be called the *red* phase of *sabini*, in having the breast, with the entire dorsal surface, including that of the tail, strongly tinged with orange-chestnut which is scarcely duller than in examples from the coast region. Some of the grayer birds present a general resemblance to *umbelloides*, but the ground tint of their plumage is always deeper, the dorsal markings richer and blacker, and the under parts very much more thickly barred. It is probable that this style of coloration will prove to be more or less characteristic of all the Ruffed Grouse inhabiting the region between the Coast Range and the Rocky Mountains.

50. *Pediceetes phasianellus columbianus* (Ord) Coues. COMMON SHARP-TAILED GROUSE. — Three specimens, taken at Fort Walla Walla, differ considerably from eastern birds. The entire upper parts are darker and duller, the usual rusty-ochraceous ground-color being replaced by plain wood brown; the dorsal markings, also, are finer, while those of the under parts are blacker and more generally distributed, the only immaculate area being the centre of the abdomen. These differences do not seem to indicate any approach to true *P. phasianellus*, which is an altogether differently colored bird. They probably have only a local significance, but the region in question is so poorly represented by the material to which I have had access, that I have not been able to form a definite opinion on this point.

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## LIST OF BIRDS ASCERTAINED TO OCCUR WITHIN TEN MILES FROM POINT DE MONTS, PROVINCE OF QUEBEC, CANADA; BASED CHIEFLY UPON THE NOTES OF NAPOLEON A. COMEAU.

BY C. HART MERRIAM, M. D.

Point de Monts is the southward termination of a high rocky promontory that separates the river from the Gulf of St. Lawrence, on the north shore. It is in latitude  $49^{\circ} 19'$  north. The country is well wooded, the forests consisting chiefly of spruce (both white and black) and balsam. Scattered about are a few birches, poplars, cedars, and tamaracks; and on a sandy terrace near the Godbout River is a quantity of the northern scrub pine (*Pinus banksiana*) that here attains a height of thirty and sometimes forty feet. The region is so far north that not only are the oaks and hickories absent, but even the hardy beech and maple do not grow here.

I visited this section of the coast in July, 1881, and again in July, 1882; and with the observations made at these times I have

incorporated the notes kindly placed at my disposal by Mr. Napoleon A. Comeau, guardian of Godbout.

The nomenclature followed is that of the second edition of Dr. Coues's Check List of North American Birds.

1. *Turdus migratorius*. ROBIN.—A common summer resident. Arrives about the first of May, and remains till late in November. Seen Dec. 22, 1879.

2. *Turdus unalascae nanus*. HERMIT THRUSH.—Tolerably common; breeds.

3. *Turdus ustulatus swainsoni*. OLIVE-BACKED THRUSH.—Not uncommon; breeds.

4. *Sialia sialis*. BLUE-BIRD.—Extremely rare. During a residence of many years at Godbout Mr. Comeau has seen but one pair of these birds: they nested in a stump near his house in July, 1880.

5. *Regulus calendula*. RUBY-CROWNED KINGLET.—A male was shot June 4, 1882.

6. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—A common resident.

7. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—A common resident, like the last.

8. *Sitta canadensis*. RED-BELLIED NUTHATCH.—Tolerably common in winter, but not observed in summer.

9. *Eremophila alpestris*. HORNED LARK.—First seen April 21, 1882, after which they were common for about three weeks and then disappeared. I found a young one, dead, at Godbout in July, 1881.

10. *Anthus ludovicianus*. TITLARK.—Tolerably common summer resident, and doubtless breeds. I have seen flocks of them in July feeding on the beach at low water. First seen May 7, 1882.

11. *Helminthophila peregrina*. TENNESSEE WARBLER.—A tolerably common summer resident. First shot June 6, 1882.

12. *Dendroeca aestiva*. SUMMER WARBLER.—Not very common. First seen June 6, 1882.

13. *Dendroeca virens*. BLACK-THROATED GREEN WARBLER.—A tolerably common summer resident.

14. *Dendroeca coronata*. YELLOW-RUMPED WARBLER.—A rather common summer resident. First seen May 29, 1882.

15. *Dendroeca blackburnæ*. BLACKBURN'S WARBLER.—Rather rare. Shot June 9, 1882.

16. *Dendroeca striata*. BLACK-POLL WARBLER. Rare. Mr. Comeau shot a male, June 7, 1882.

17. *Dendroeca maculosa*. BLACK-AND-YELLOW WARBLER.—The commonest Warbler, breeding abundantly. Earliest seen May 29, 1882.

18. *Siurus naevius*. WATER THRUSH.—Rather rare. Shot June 6, 1882. Others seen.

19. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—Not common. Saw two in the clearing about Mr. Allan Gilmour's camp on the Godbout.

20. *Myiodioides pusillus*. BLACK-CAPPED YELLOW WARBLER. — Rather rare. Shot June 9, 1882. Others seen.
21. *Myiodioides canadensis*. CANADIAN FLYCATCHING WARBLER. — A tolerably common summer resident.
22. *Setophaga ruticilla*. REDSTART. — Tolerably common. First seen June 9, 1882.
23. *Hirundo erythrogastra horreorum*. BARN SWALLOW. — Rare, and not known to breed. Mr. Comeau shot one May 29, 1882.
24. *Iridoprocne bicolor*. WHITE-BELLIED SWALLOW. — Common; breeds plentifully. First seen May 12, 1882.
25. *Petrochelidon lunifrons*. CLIFF SWALLOW. — A small colony nested in the deserted Hudson's Bay Trading Post at Godbout this year.
26. *Ampelis cedrorum*. CEDAR-BIRD. — A tolerably common summer resident.
27. *Lanius borealis*. GREAT NORTHERN SHRIKE. — Occurs, but is not known to breed.
28. *Pinicola enucleator*. PINE GROSBEAK. — A tolerably common resident. In autumn it feeds extensively upon the berries of the mountain ash. I have already published a note on the breeding of this species at Godbout.\*
29. *Carpodacus purpureus*. PURPLE FINCH. — Not very common. First seen April 26, 1882.
30. *Loxia leucoptera*. WHITE-WINGED CROSSBILL. — Tolerably common, but somewhat irregular in appearance. I found this species to be very abundant here in July, 1881, while in July, 1882, I did not see any.
31. *Ægiothus linaria*. RED-POLL. — Very abundant in winter, large flocks being seen nearly every day. They all seem to move in one direction, following the shore westward.
32. *Chrysomitris pinus*. PINE LINNET. — Generally common, but somewhat irregular.
33. *Astragalinus tristis*. AMERICAN GOLDFINCH. — Rather rare. I saw a small flock in July, 1882.
34. *Plectrophanes nivalis*. SNOW BUNTING. — Very common in flocks in winter. Seen as late as the middle of May.
35. *Centrophanes lapponicus*. LAPLAND LONGSPUR. — Large flocks of this species appear on this part of the coast during the latter part of April, remaining till about the middle of May. They are then very abundant, occurring both alone and in flocks with the preceding.
36. *Passerculus sandvicensis savana*. SAVANNA SPARROW. — Tolerably common, breeding on the thinly grassed sand-fields about the mouth of the Godbout. Mr. Comeau shot one as early as April 21, 1882.
37. *Melospiza fasciata*. SONG SPARROW. — A rather common summer resident in suitable places, arriving early in May. Particularly numerous in the clearing about Allan Gilmour's camp on the Godbout.
38. *Junco hiemalis*. BLACK SNOWBIRD. — Very common. First seen May 16, 1882.

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\* See this Bulletin, Vol. VII, pp. 120, 121.

39. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.—The commonest Sparrow, breeding everywhere. First seen May 14, 1882. This bird is the "Nightingale" of the Canadians.

40. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.—Breeds, but is not common.

41. *Agelæus phœniceus*. RED-SHOULDERED BLACKBIRD.—Very rare. The only one ever seen here was a female, and was shot by Mr. Comeau May 22, 1882.

42. *Xanthocephalus icterocephalus*. YELLOW-HEADED BLACKBIRD.—An accidental straggler from the west. Mr. Comeau shot a male of this species in his door yard, at Godbout, early in September, 1878.\*

43. *Quiscalus purpureus*. CROW BLACKBIRD.—Rare. Sometimes seen in flocks in spring.

44. *Corvus corax*. RAVEN.—A common resident. May 12, 1882, Mr. Comeau found one of their nests on the face of a cliff about half-way between Godbout and Point de Monts. It contained four full-fledged young that must have been at least three or four weeks old.

45. *Corvus frugivorus*. CROW.—A common summer resident, sometimes wintering. I have observed that the Crows here find much of their food along the beach at low water.

46. *Cyanocitta cristata*. BLUE JAY.—Resident but not very common.

47. *Perisoreus canadensis*. CANADA JAY.—A tolerably common resident.

48. *Tyrannus carolinensis*. KING-BIRD.—Not rare. Earliest seen June 9, 1882.

49. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER.—I have seen a specimen that Mr. Comeau shot June 15, 1882.

50. *Chordeiles popetue*. NIGHT-HAWK.—A common summer resident. First seen June 5, 1882. I saw Night-hawks flying about overhead nearly every day while at Godbout, both in July, 1881, and July, 1882.

51. *Chætura pelagica*. CHIMNEY SWIFT.—Generally tolerably common, but not seen this year.

52. *Ceryle alcyon*. BELTED KINGFISHER.—A rather common summer resident, arriving about the first of May. About June 13, 1882, Mr. Comeau found three Kingfisher's nests in a bank, and each contained seven fresh eggs.

53. *Hylotomus pileatus*. PILEATED WOODPECKER.—Very rare. Mr. Comeau has shot but one here.

54. *Picus villosus*. HAIRY WOODPECKER.—A tolerably common resident, being particularly fond of the burnt-over scrub-pine barren near Godbout.

55. *Picus pubescens*. DOWNY WOODPECKER.—A tolerably common resident, like the last.

56. *Picoides arcticus*. BLACK THREE-TOED WOODPECKER.—Resident; not rare.

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\* See this Bulletin, Vol. VI, p. 246.



57. *Colaptes auratus*. GOLDEN-WINGED WOODPECKER. A tolerably common summer resident. First seen May 14, 1882.

58. *Bubo virginianus*. GREAT HORNED OWL. — A rather common resident.

59. *Asio wilsonianus*. LONG-EARED OWL. — Rare. Mr. Comeau shot three in May, 1877 or 1878.

60. *Asio accipitrinus*. SHORT-EARED OWL. — A rather rare summer resident. Earliest seen May 9, 1882.

61. *Strix nebulosa*. BARRED OWL. — A tolerably common resident.

62. *Nyctea scandiaca*. SNOWY OWL. — Very irregular in appearance; sometimes very abundant in winter, and sometimes not seen for several years. Mr. Comeau shot one May 17, 1882, and Mr. Gregoire Labrie killed one May 31, 1880. These are the latest dates at which they have been seen in this section.

63. *Surnia funerea*. HAWK OWL. — Common in winter, generally appearing in November and not remaining later than February.

64. *Nyctala tengmalmi richardsoni*. RICHARDSON'S OWL. — A common winter resident, and very tame. This Owl has a low liquid note that resembles the sound produced by water slowly dropping from a height; hence the Montagne Indians call it *pillip-pile-tshish*, which means "water-dripping bird." These Indians have a legend that this was at one time the largest Owl in the world, and that it had a very loud voice. It one day perched itself near a large waterfall and tried not only to imitate the sound of the fall but also to drown the roaring of the torrent in its own voice. At this the Great Spirit was offended and transformed it into a pygmy, causing its voice to resemble slowly dripping water instead of the mighty roar of a cataract.

65. *Nyctala acadica*. SAW-WHET OWL. — Not very common. In winter Mr. Comeau once saw one of these little Owls fly out from within the carcass of a great northern hare that had been caught in a snare. The Owl had eaten away the abdomen and was at work within the thoracic cavity when frightened away.

66. *Circus cyaneus hudsonius*. MARSH HARRIER. — A tolerably common summer resident. Three individuals were seen as early as May 5, 1882.

67. *Astur atricapillus*. GOSHAWK. — Not rare.

68. *Falco sacer obsoletus*. LABRADOR GYRFALCON. — Mr. Comeau has killed several of these rare Falcons in the vicinity of Godbout.

69. *Falco columbarius*. PIGEON HAWK. — Not rare, and doubtless breeds.

70. *Falco sparverius*. SPARROW HAWK. — Rare. One shot May 5, 1882.

71. *Archibuteo lagopus sancti-johannis*. ROUGH-LEGGED BUZZARD. — Breeds, and is rather common. The southward migration commences about the last of September and continues into November. During this period large numbers of these Hawks are constantly passing over this part of the coast on the way to their winter quarters.

72. *Pandion haliaëtus*. FISH HAWK.—A few pairs of Fish Hawks breed in this vicinity every year. They were first seen May 2, 1882. They depart in November.

73. *Aquila chrysaëtus*. GOLDEN EAGLE.—Breeds, and is not particularly rare. Mr. Comeau has shot three, and knows of half a dozen that were caught in steel-traps.

74. *Haliaëtus leucocephalus*. WHITE-HEADED EAGLE.—Tolerably common; breeds. They arrive in March, and remain till December or January. Mr. Comeau found a nest, early in June, that contained three young about the size of Crows.

75. *Ectopistes migratorius*. WILD PIGEON.—A rather rare and very irregular visitor.

76. *Zenaidura carolinensis*. CAROLINA DOVE.—Of this southern species Mr. Comeau has killed two at Godbout; the first, a male, he shot October 10, 1881, and the second, a female, June 6, 1882.

77. *Canace canadensis*. SPRUCE GROUSE.—A resident species, but rather rare.

78. *Bonasa umbella*. RUFFED GROUSE.—A resident, like the last, but not common. This appears to be the northern limit of the Grouse on the east coast, and I was unable to find any evidence of its presence lower down along the north shore of the Gulf.

79. *Lagopus albus*. WILLOW PTARMIGAN.—Very abundant during the early part of some winters, but during other years it does not occur at all. They generally arrive about the first of December, and a few remain till the first of May. They are always most abundant in December, and Mr. Comeau once killed six hundred before Christmas! He has shot as many as eighty-two in a single morning.

80. *Squatarola helvetica*. BLACK-BELLIED PLOVER.—Rather rare and irregular in occurrence. Mr. Comeau has shot it in May and September.

81. *Charadrius dominicus*. GOLDEN PLOVER.—Tolerably common in September, and sometimes seen in spring.

82. *Ægialites vociferus*. KILDEER PLOVER.—Mr. Comeau says that this species breeds and is not rare.

83. *Ægialites semipalmatus*. RING-NECK.—Occurs in spring.

84. *Streptilas interpres*. TURNSTONE.—Tolerably common in September.

85. *Steganopus wilsoni*. WILSON'S PHALAROPE.—Mr. Comeau tells me that this Phalarope occurs during the fall migration, but is not common.

86. *Phalaropus fulicarius*. RED PHALAROPE.—Not rare in September.

87. *Gallinago wilsoni*. SNIPE.—A rather rare migrant.—Earliest killed May 9, 1882.

88. *Macrorhamphus griseus*. RED-BREASTED SNIPE.—Occurs during the fall migration.

89. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—Tolerably common. First seen during the latter part of May, and common in August and September.

90. *Actodromas minutilla*. LEAST SANDPIPER. — Rather common in spring and fall.
91. *Actodromas maculata*. PECTORAL SANDPIPER. — Occurs in fall, but is not common.
92. *Actodromas bonapartii*. WHITE-RUMPED SANDPIPER. — Mr. Comeau shot one May 31, 1882.
93. *Calidris arenaria*. SANDERLING. — Occurs in the fall migration.
94. *Totanus melanoleucus*. GREATER TATTLER. — Common spring and fall. Earliest shot May 9, 1882. Passes south in September.
95. *Totanus flavipes*. YELLOW-SHANKS. — Common during the migrations. Occurs with the preceding.
96. *Rhyacophilus solitarius*. SOLITARY TATTLER. — Tolerably common, breeding about the fresh water lakes and streams.
97. *Tringoides macularius*. SPOTTED SANDPIPER. — A tolerably common summer resident.
98. *Numenius borealis*. ESKIMO CURLEW. — Common in August and September.
99. *Numenius hudsonius*. HUDSONIAN CURLEW. — Rather rare. Mr. Comeau has shot it in August.
100. *Ardea herodias*. GREAT BLUE HERON. — Rather rare, and generally seen in September.
101. *Ardea egretta*. GREAT WHITE EGRET. — Accidental straggler from the south. One seen June 9, 1882, on an island in Godbout River.
102. *Botaurus mugitans*. AMERICAN BITTERN. — Rare. Mr. Comeau has shot several here, and tells me that they are common at Manacougan, thirty miles west of Godbout.
103. *Cygnus* sp. — ? A swan was shot at Point de Monts by an Indian in 1870.
104. *Chen hyperboreus*. SNOW GOOSE. — Rare. Mr. Comeau has shot it in October.
105. *Bernicla brenta*. BRANT GOOSE. — Breeds, and is by no means rare. Arrives in April, remaining into November and sometimes December.
106. *Bernicla canadensis*. CANADA GOOSE. — A common migrant, arriving during the latter part of March and departing in November. They breed at Natashquan, Western Labrador.
107. *Anas obscura*. BLACK DUCK. — A tolerably common summer resident, breeding about the fresh water lakes.
108. *Dafila acuta*. PINTAIL. — The only one Mr. Comeau ever saw here he shot June 7, 1882.
109. *Querquedula carolinensis*. GREEN-WINGED TEAL. — Rare here, but they breed at Manacougan.
110. *Querquedula discors*. BLUE-WINGED TEAL. — Rare, but oftener seen than the preceding. Has been shot early in May.
111. *Fuligula affinis*. SCAUP DUCK. — Tolerably common in October.
112. *Fuligula collaris*. RING-NECK DUCK. — Mr. Comeau has killed two in spring.

113. *Clangula glaucium*. GOLDEN-EYE. — A resident species, and tolerably common. Breeds on fresh water only. Remains throughout the winter.

114. *Clangula islandica*. BARROW'S GOLDEN-EYE. — A common resident, breeding, like the foregoing, on fresh water, and remaining on the Gulf all winter.

115. *Clangula albeola*. BUTTER-BALL. — Rare. Has been shot in October.

116. *Harelda glacialis*. OLD WIFE. — Resident. Very abundant in winter, the largest flocks being seen in December, January, and February. Mr. Comeau took one in full summer plumage as early as April 23, 1882. Tolerably common in summer, and supposed to breed.

117. *Histrionicus minutus*. HARLEQUIN DUCK. — Rare, and only seen during the latter part of April and early in May. This year Mr. Comeau saw two April 16, and shot one May 8, out of a flock of four.

118. *Somateria mollissima*. EIDER DUCK. — A permanent resident, but rather rare.

119. *Somateria spectabilis*. KING EIDER. — Rare. Has been known to breed.

120. *Cedemia americana*. BLACK SCOTER. — Common from early in April till some time in November. They do not remain through the winter.

121. *Cedemia fusca*. VELVET SCOTER. — A common resident. The largest flocks are seen in April and November, and the species is common all the year round.

122. *Cedemia perspicillata*. SURF DUCK. — Very common from April to November, but does not winter. The males greatly preponderate over the females in this species, and Mr. Comeau tells me that the proportion is always about seven males to one female.

123. *Mergus merganser*. SHELLDRAKE. — Tolerably common, breeding about the fresh water.

124. *Mergus serrator*. RED-BREASTED MERGANSER. — Very common, frequenting both fresh and salt water.

125. *Sula bassana*. GANNET. — Occasional. I have found it breeding in numbers at the west end of Anticosti, but do not think it nests farther up in the Gulf.

126. *Phalacrocorax carbo*. COMMON CORMORANT. — Rare, but Mr. Comeau has shot several here.

127. *Phalacrocorax dilophus*. DOUBLE-CRESTED CORMORANT. — Mr. Comeau shot a female May 19, 1882.

128. *Stercorarius pomatorhinus*. POMATORHINE JAEGER. — Rare.

129. *Stercorarius parasiticus*. PARASITIC JAEGER. — Rather rare. Mr. Comeau shot six in one day about the middle of May, 1874.

130. *Larus glaucus*. GLAUCCUS GULL; ICE GULL. — Rather rare. Usually seen in February, March, and April. I have a handsome male which was shot by Mr. Comeau April 29, 1882.

131. *Larus leucopterus*. WHITE-WINGED GULL. — Not common. Commonly appears and disappears with the last. Mr. Comeau has shot it as late as May 1.

132. *Larus marinus*. GREAT BLACK-BACKED GULL. — Breeds, and is tolerably common. It is absent only in January and February. July 17, 1882, I found one of their nests on Great Baule, one of the Seven Islands. It consisted of a little coarse grass placed in a slight depression in the rock, and was lined with a sort of pad, about four inches in diameter, of beautiful soft down, on which reposed a single egg. The egg had been incubated, but failed to hatch.

133. *Larus argentatus smithsonianus*. HERRING GULL. — Very abundant, breeding plentifully on suitable rocks. Arrives about the middle or latter part of April, remaining into November.

134. *Rissa tridactyla*. KITTIWAKE. — Breeds abundantly. Arrives late in April or early in May, remaining into December. This and the preceding are the commonest Gulls along this part of the coast, and are constantly seen, both singly and in immense flocks. They follow the receding tide and cover the sand flats that are exposed at low water, feeding upon the molluscs and other marine animals that abound in such situations. I have seen more than a thousand at one time.

135. *Pagophila eburnea*. IVORY GULL. — Very rare. Mr. Comeau shot a male in April, 1877, at Point de Monts. The specimen was presented to the Museum at Bersimis Mission, where it is now preserved.

136. *Chroicocephalus philadelphia*. BONAPARTE'S GULL. — A tolerably common summer resident, arriving late in May.

137. *Sterna macrura*. ARCTIC TERN. — Very abundant at certain places, where it breeds. Mr. Comeau once killed sixteen at one shot, flying. It arrives early in June.

138. *Cymochorea leucorrhoa*. LEACH'S PETREL. — Common in summer.

139. *Colymbus torquatus*. LOON. — Common. Breeds about the fresh-water lakes of the interior. I saw many, and heard others, in the Gulf, near Point de Monts, in July. Earliest seen April 12, 1882.

140. *Colymbus septentrionalis*. RED-THROATED DIVER. — Common, breeding with the last, but not arriving so early, usually coming in May.

141. *Podiceps griseigena holboëlli*. RED-NECKED GREBE. — Rare; one shot in September.

142. *Podilymbus podiceps*. DAB-CHICK; HELL DIVER. — Not rare; killed both spring and fall.

143. *Fratercula arctica*. PUFFIN; SEA PARROT. — Not common as far up as Point de Monts, but very abundant on the Mingan Islands, where they breed by thousands.

144. *Alle nigricans*. DOVEKIE. — Very abundant in flocks during some winters, arriving early in December and remaining till some time in February. During other winters it is rare or does not occur at all.

145. *Uria grylle*. BLACK GUILLEMOT; SEA PIGEON. — A common resident, breeding not only here, but even on the islands off the mouth of the Saguenay, an hundred and fifty miles farther up the St. Lawrence.

146. *Lomvia troile*. FOOLISH GUILLEMOT; MURRE. — Like the Dovekie, the Murre is sometimes very abundant here in winter, while during

other winters it does not occur at all. It is not wary, and does not even know enough to keep out of the way of dogs along the shore. It is well named the "Foolish" Guillemot, for both its habits and appearance deserve this appellation. In fact it looks like a perfect idiot, swimming over on one side as if one leg were broken, and staring vacantly at its enemies without attempting to escape. Its *tout ensemble* is stupid and gawky.

During the winter of 1875 they were so exceedingly abundant that Mr. Comeau shot about a thousand for their feathers, and his dog caught over fifty. They were all in very poor flesh, some being little more than animated skeletons, and a great many died and were washed ashore.

147. *Utamania torda*. RAZOR-BILLED AUK.—Not common here, but breeds on the Mingan Islands.

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## Recent Literature.

THE COUES CHECK LIST AND ORNITHOLOGICAL DICTIONARY.\*—The April number of the Bulletin contained (p. 111) a brief preliminary notice of this work, prepared from advance proof sheets. It was not published until June, and therefore too late for the appearance in our July number of a satisfactory review. As stated in the title the work is a second edition of the "Check List" which originally appeared in 1873 and was reissued in 1874 in connection with "Field Ornithology," as a reflex of the classification and nomenclature of the "Key to North American Birds" (1872), though containing a few additional species. The original List gave 778 names; the present one gives 888, subtracting 10† and adding 120.

"In revising the List," says the author, "for the main purpose of determining the ornithological *status* of every North American bird, the most scrupulous attention has been paid to the matter of nomenclature,—not only as a part of scientific classification, determining the technical relations of genera, species, and varieties to each other, but also as involved in writing and speaking the names of birds correctly. The more closely the matter was scrutinized, the more evidences of inconsistency,

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\* The Coues Check List of North American Birds. Second Edition, Revised to Date, and entirely Rewritten, under Direction of the Author, with a Dictionary of the Etymology, Orthography, and Orthoepy of the Scientific Names, the Concordance of previous Lists, and a Catalogue of his Ornithological Publications. [Monogram.] Boston, Estes and Lauriat. 1882. 1 vol. imp. 8vo. pp. 165.

† The 10 species retired are: *Ægiothus fuscescens*; *Centronyx ochrocephalus*; *Sphyrapicus williamsoni*; *Lampornis mango*; *Agyrtria linnaei*; *Momotus ceruleiceps*; *Ibis thalassina*; *Ardea wuerdehumani*; *Sterna "longipennis"* (*S. pikii* Lawr.); *Podiceps cristatus*. The list of added species (too long to print here) is given on pp. 6-8 and 10 of the Check List.

negligence, or ignorance were discovered in our habitual use of names. It was therefore determined to submit the current catalogue of North American birds to a rigid examination, with reference to the spelling, pronunciation, and derivation of every name—in short, to revise the list from a philological as well as an ornithological standpoint.”

“The purpose of the present ‘Check List’ is thus distinctly seen to be two-fold: First, to present a complete list of the birds now known to inhabit North America, north of Mexico, and including Greenland, to classify them systematically, and to name them conformably with current rules of nomenclature; these being ornithological matters of science. Secondly, to take each word occurring in such technical usage, explain its derivation, significance, and application, spell it correctly, and indicate its pronunciation with the usual diacritical marks; these being purely philological matters, affecting not the scientific status of any bird, but the classical questions involved in its name” (pp. 3, 4).

The analysis of the two editions shows that of the 120 additions to the old list the large majority are *bona fide* species, and actual acquisitions to the North American list, being birds discovered since 1873 in Texas, Arizona, and Alaska, together with several long known to inhabit Greenland, which had never been formally included in the “North American” list at the time Dr. Coues’s first Check List was issued, though the Greenland Fauna, even then, was generally claimed and conceded to be North American. Beside these, the increment is represented by species or varieties named as new to science since 1873, by a few restored to the list, and by two (*Passer montanus* and *Coturnix dactylisonans*) imported and now naturalized species.

The author states that the list includes the names of some twenty or thirty sub-species which “my conservatism would not have allowed me to describe as valid, and the validity of which I can scarcely endorse,” but which are retained because “I preferred, in preparing a ‘Check List’ for general purposes, rather to present the full number of names in current usage, and let them stand for what they may be worth, than to exercise any right of private judgment, or make any critical investigation of the merits of disputed cases.” In view of this declaration, however, we fail to understand why such names as *Carpodacus purpureus californicus*, *Chondestes grammacus strigatus*, *Picus villosus leucomelas*, *Bubo virginianus subarcticus*, *Bubo virginianus saturatus*, and *Oreortyx picta plumifera* should have been denied a place. Nor can we approve the exclusion of certain Audubonian species “not since identified,” as well as some of Giraud’s, which there is no good reason to doubt were actually taken in Texas. “A few Cape St. Lucas birds have been so long in the ‘North American’ list that it is not thought worth while to displace them”; but does not this consideration apply with equal force to many of the Mexican species which are excluded? Our present southern boundary is a political, not a natural one, but this is all the more reason why it should be rigidly adhered to if followed at all. As Dr. Coues remarks, however, it would be far more satisfactory, from a scientific standpoint, to ignore the present

arbitrary line and include the whole "Nearctic Region," thus taking in the table lands of Mexico nearly to the Isthmus of Tehuantepec.

To the analyses and comparisons succeed "Remarks on the use of Names," ten pages being devoted to the principles which have guided the author in his philological researches so far as the etymology, orthography, and orthoepy are concerned. This portion of the work has something more than an indirect value, for it forms a condensed, readily available grammar of the subject to which it pertains. The assistance here rendered by his literary associate, Mrs. S. Olivia Weston-Aiken, is fittingly acknowledged in the Introduction.

In the body of the Check List the names are printed in bold type, both English and Latin, and are numbered 1 to 888. Sub-generic names are entirely discarded, as is the sign of "var." between specific and sub-specific terms. The nomenclature of sub-species is therefore trinomial, without the slightest disguise. The technical name is followed by the name of the original describer of the bird, and by that of the authority for the particular combination adopted. The "concordance of previous lists," mentioned in the title, is effected by referring by number to Baird's List of 1858, Coues's Check List of 1874, and Ridgway's Catalogue of 1880, in the case of every species.

On each page the names are duplicated in smaller type, divided into syllables marked for quantity and accent, and their pronunciation therefore shown, according to the system of orthoepy advocated. The most important point secured, however, is the etymology or derivation of the scientific words. "On the whole," say the authors of this part of the work, "it has not been our intention to go beyond a good fair definition of these Greek and Latin words, considering that all practical purposes are thus subserved." The etymologies are really, however, traced far back in many cases. "Nothing of the sort has been done before, to the same extent at any rate, and it is confidently expected that the information here given will prove useful to many who, however familiar they may be with the appearance of the names on paper, have comparatively little notion of the derivation, signification, and application of the words, and who unwittingly speak them as they usually hear them pronounced, that is to say, with glaring impropriety. No one who adds a degree of classical proficiency to his scientific acquirements, be the latter never so extensive, can fail to handle the tools of thought with an ease and precision so greatly enhanced, that the merit of ornithological exactitude may be adorned with the charm of scholarly elegance" (p. 4).

The Check List proper is concluded with "a list of words defined," alphabetically arranged, and therefore serving as an index to the work.

The volume finishes with a chronological list of Dr. Coues's writings on ornithology.

Aside from modifications which affect the ornithological or scientific *status* of the "Check List," the changes in nomenclature are numerous and radical. Under our accepted, but in certain ways pernicious, system of ornithological nomenclature most of these were probably necessary;



but we have little sympathy with the recent upheaval in this respect, nor do we believe that the names at present advocated will prove more stable than those which have preceded them. Stejneger has lately shown\* that neither Coues nor Ridgway reached the foundations; and doubtless some one of an equally enquiring mind and with an imagination still better adapted to interpreting ancient descriptions of uncertain application, will yet come forward and work fresh havoc. The trouble with this kind of investigation is that sufficient regard is rarely paid to the rule that a description must be clearly defined, and that "definition properly implies a distinct exposition of essential characters." We have not forgotten Mr. Allen's eloquent protest against the adoption of certain Bartramian names, and there can be no doubt that his objections will apply equally well to the descriptions of many other early authors. Moreover, while we distinctly disclaim any personal application of such a thought, we cannot help believing that if *the practice of giving the authority for the arrangement of names* were discontinued, there would be less of this meddling with nomenclature. At all events the evil is a terrible one, and it must be stopped, even if the whole code has to be thrown overboard and a new one instituted. So extreme a course, however, is probably unnecessary, for some simple statute of limitation can doubtless be devised which will answer all the required ends. Dr. Coues's recent suggestion,† that fifty years of unchallenged usage shall fix a name forever, is an excellent one, but the time of probation might, with advantage, be reduced to twenty-five years. Such a provision, with one requiring all proposed changes to be referred to a tribunal composed of not less than three prominent ornithologists, who might meet for the purpose at intervals of say once in four years, would effectually prevent any further tampering with a system which should be sacred, but which has become a mere football.

With respect to genera we are sorry to notice that Dr. Coues has abandoned certain old-time principles and adopted many of the sub-divisions which he rejected in the edition of 1873. Chief among these are *Actodromas*, *Arquatella*, *Pelidna*, and *Ancylochilus*, in *Tringa*; *Symphemia* and *Rhyacophilus* in *Totanus*; *Herodias*, *Garzetta*, *Hydranassa*, *Dichromanassa*, *Florida*, and *Butorides* in *Ardea*, and *Chroicocephalus* in *Larus*. *Turdus*, however, is retained for all the Thrushes of the sub-family *Turdinæ*, and *Vireo*, in its euphonious simplicity, stands for all the Vireos. While we would not be understood as condemning all the above changes, we consider the majority of them arbitrary, and hence uncalled for. The ever increasing tendency to institute new genera on differences of structure which in other classes of Vertebrates would be considered no more than well-marked specific characters, is one of the banes of modern ornithology. Our systematists seem to have lost sight of the uses for which genera were primarily intended. Of this

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\* Proc. U. S. Nat. Mus., June, 1882, pp. 28-43.

† This Bulletin, Vol. VII, pp. 178, 179.

school, however, Dr. Coues is perhaps among the more conservative members.

Having fulfilled our duty of critic by finding all possible fault with the "Coues Check List" we turn to the much pleasanter task of mentioning some of its many good qualities. Of its several departments the introductory chapters may be characterised as terse, practical, and to the point; the Check List proper as carefully and in the main wisely framed; the "dictionary" as an exhaustive treatise of high scholarly excellence and of unquestionable utility. Concerning the whole work we can say nothing stronger than that it is in every way worthy of its brilliant and distinguished author, who has evidently made it one of his most mature and carefully studied efforts. Its favorable reception can be a matter of no uncertainty, for it fills a field of usefulness peculiarly its own, and one which need in no way conflict with that so ably covered by Mr. Ridgway's recent "Nomenclature."\*—W. B.

GENTRY'S NESTS AND EGGS OF BIRDS OF THE UNITED STATES.†—It is now several months since the appearance of the twenty-fifth part, the final number of this work, which was published by subscription. The text is written by Mr. Gentry himself, while the plates were executed by Mr. Edwin Sheppard, "subject to the suggestions and dictations of the author." The title is misleading, for instead of treating of all the species found in the United States, it deals with but fifty—less than one-fifth the number known to occur within this area.

The typography and press work are good, but the plates fall far short of deserving the same praise. In the early numbers the nests and eggs were generally figured alone, but the author soon acceded to the popular demand and furnished colored representations of the birds on all plates commencing with the seventh part; with the final number appeared four extra plates, on which were shown the birds that were omitted in the first six parts.

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\* While it is unfortunate that there should be two check lists of North American birds, Dr. Coues's right to publish his views in this form was undeniably established when his first list was issued and accepted. Moreover, we see no reason why others should be debarred from the same privilege, and we fancy that a third list, representing a different and more conservative school of thought, especially in the matter of nomenclature, would have a large following. As regards a choice of names, in the comparatively few cases where the present authorities differ we should weigh well before accepting either. Many persons, doubtless, have neither the time nor the inclination to do this, and such, necessarily, must be guided by individual preferences in favor of one or the other author. In all cases of publication, however, a simple statement of the authority followed will be sufficient to prevent any confusion or misunderstanding.

† Illustrations of Nests and Eggs of Birds of the United States, with Text, by Thos. G. Gentry. Philadelphia: J. A. Wagenseller, Publisher, No. 23 North Sixth Street. Copyright by J. A. Wagenseller, 1881. [4to, parts 1-25, pp. 1-300. 54 col. chromolithographs, and chromo-portrait frontispiece of the author. Price, \$25.00. 1880-82.]

In a general way it may be said of most of the plates that the perspective is very bad—if not absent altogether; that a large number of the nests look as if temporarily balanced, like so many saucers, upon the branches on which they rest, and from which they seem ready to tumble on the slightest jar; and that nearly all have the appearance of cheap chromo-lithographs, while none attain to the degree of excellence essential to first-class workmanship. In order to give the subscribers as much paint as possible for the money, the artist has endeavored to supply backgrounds to many of the plates. Some of these seem intended to represent distant mountains, but the greater number consist of dense, and sometimes shapeless masses of solid green. At other times we are treated to glimpses of the sky and ocean that rival, in depth and intensity of color, the rich ultramarine-blue of the head of the Nonpareil.

Turning now to the letter-press let us examine its claim to rank among the contributions to ornithological literature. A few brief quotations will suffice to show both the scope of the work and the author's estimate of its value. In the preface he says: "Especial pains have been taken with the text. The aim of the author has been to present a short, plain, and detailed account of the habits of each species described. . . .

"Throughout the work, considerable prominence has been given to those interesting and curious phases of bird life which are present during the breeding period, and which have been the principal study of the author for many years. Extraneous matter has been sedulously omitted, and nothing permitted to appear about which there could be serious doubts of accuracy.

"With these few preliminary remarks, we send this beautiful book out into the world, trusting that it may meet with a cordial reception everywhere."

That the work does not contain anything approaching a complete "detailed account of the habits" of a single species is evident from the most cursory examination of the biographies. On the other hand, we are given an amount of detail and exact data, concerning some of the most inaccessible points connected with the breeding habits of birds, that excite, first, admiration (for the author's extraordinary acuteness of observation); next, astonishment (at the possibility of attaining a knowledge of certain peculiarities mentioned); and finally, incredulity (regarding the reliability of the author's statements).

To be more explicit: Not only does Mr. Gentry tell us the exact number of days consumed in building the nest, in depositing the eggs, in incubation, the period the young remain in the nest, and the length of time they are afterwards fed by the parents; but he goes further and states how much time is devoted to courting, gives the period of mating and the duration of the honeymoon, and tells us how many days are spent in the selection of a suitable and satisfactory site for the nest, not omitting, in some cases, to mention which sex governs in making the choice. A few citations, in the author's own words, will suffice to demonstrate his unparalleled perspicacity in these matters.

Speaking of the Wood Pewee he says: "The assumption of matrimonial relations, however, is not a matter that is entered into without more or less consideration. . . . The ceremony of mating being over—which business is ordinarily of short continuance, seldom lasting for a greater period than two days—the newly-wedded pair now set out to discover a suitable place for the building of a home. This is a matter of considerable moment, often requiring the performance of long and extended tours of observation and exploration. These reconnoissances generally last for a week, . . . . The site being mutually agreed upon, the happy pair proceed with all possible dispatch and diligence to construct a domicile: the male to collect and bring in the necessary materials; the female to fix them in their proper places, . . . Having finished their home, only a day or so intervenes when oviposition becomes the controlling instinct. The female now proceeds to deposit her complement of four eggs, which she does on consecutive days, at the rate of a single egg daily. This is followed, on the day succeeding the last deposit, by the trying duty of incubation. Upon the female devolves this arduous and irksome labor."

Of the nesting of the Cat-bird he tells us that "ordinarily a week or ten days are spent in making a choice of locality."

With the Orchard Oriole "Mating does not occur," he says, till "more than two weeks after the advent of the sexes. . . . The sexes having come together in a wise and business-like way, with little or none of the bluster that is customary on such occasions, a conference ensues, which results in a temporary separation for mutual good; one bird going in one direction and the other in an entirely opposite course. The selection of a suitable spot for a home is the *vera causa* of this divergence. . . . In five or six days from the time of the assumption of matrimonial relations the nest is started, and through the united efforts of both birds for the period of a week is brought to completion."

Of the Hummingbird he writes, "The sexes, tired as it were, of the riotous and luxurious lives they have been leading, come together by mutual agreement, and enter into matrimonial relations. This being accomplished, they separate for a brief period, and each proceeds to scour the country for miles around in quest of a suitable tree in which to locate. When one is selected by either bird the other is summoned to the spot to talk over, in true bird language, the merits thereof. Should the parties differ as to the advantageousness of the site, no quarrelling or bickering is indulged in, but, in the most friendly manner, they separate and renew the search until one is found which gives satisfaction."

In his biography of the Chewink occurs the following: "The females wholly entranced, yield to the persuasions of their would-be lords, and conjugal relations are entered into. . . . But the happy couple are not yet ready to begin nest building. They must needs celebrate the occasion of their marriage. Accordingly they set out on a wedding trip, so to speak, visiting adjoining lots and thickets, and enjoying the delights and scenes around them. This continues for four or five days, when the lovers, thoroughly surfeited, return and quietly settle down to prosy life."

Such statements as the foregoing cast a shadow of suspicion upon remarks that otherwise might be regarded as authentic, and attach to the work the stigma of untrustworthiness.

The account of the nocturnal habits of the Virginia Rail, although the wording is changed, savors strongly of the latter part of the 537th page of Coues's "Birds of the Northwest."

Enough has been said to show that instead of becoming an authority, worthy of place amongst the standard works on North American ornithology, Mr. Gentry's book on nests and eggs must inevitably find its level alongside such unreliable and worthless productions as Jasper's "Birds of North America" and similar trash. In other words, instead of a work of scientific value, we have a popular picture-book, well-adapted for the amusement of children.—C. H. M.

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### General Notes.

DENDROCEA PALMARUM AT SING SING, NEW YORK.—On April 29, 1882, while collecting at this place, I killed a specimen of the true *D. palmarum*. The bird is unusually yellow beneath, but Mr. Robert Ridgway, who kindly compared it, says: "We have several specimens from Wisconsin and Illinois which will match it." It was busily engaged, when captured, in catching winged insects in a low swampy thicket.—A. K. FISHER, M. D., *Sing Sing, N. Y.*

NEST AND EGGS OF SETOPHAGA PICTA—A CORRECTION.—Mr. W. E. Bryant has kindly called my attention to the fact that he described two nests and sets of eggs of the Painted Redstart in Vol. VI of this Bulletin (pp. 176, 177). The clutch found by Mr. Stephens and mentioned by me in the last number of the Bulletin (Vol. VII, July 1882, pp. 140, 141) is, therefore, the third, instead of the first authentic one known. I take this opportunity for correcting the mistake, and at the same time tender my apology to Mr. Bryant for the inadvertent oversight of his note.—WILLIAM BREWSTER, *Cambridge, Mass.*

THE SUMMER TANAGER (*Pyranga æstiva*) IN NEW BRUNSWICK.—While staying at Grand Manan, N. B., in June, last year, I saw in the possession of Mr. J. F. C. Moses a Summer Tanager which had been taken there a few weeks before. It was shot at North Head, Grand Manan, about the 12th or 14th of May, 1881, by a boy who brought it in the flesh to Mr. Moses, by whom it was mounted. The bird—which was undoubtedly a male, though dissection had been neglected—was in full plumage,

and showed no signs of previous captivity. Indeed in that thinly settled region the capture of an escaped cage bird would be an unlikely event. The specimen is now in the collection of Mr. George A. Boardman.

This adds another case to the list of southern birds that have occasionally found their way to the neighborhood of the Bay of Fundy. The causes of their coming still remain hidden, and more light is needed before the facts can be satisfactorily explained.—CHARLES F. BATCHELDER, *Cambridge, Mass.*

THE EVENING GROSBEAK IN NEW YORK.—Mr. Charles F. Earle writes me from Syracuse, N. Y., July 11th, as follows: "On the 8th of the present month I saw a male Evening Grosbeak (*Hesperophona vespertina*) near Marcellus Station, Onondaga County, N. Y. Being engaged in fly-fishing at the time, I was unable to secure the bird; but there is no question of the identification, as I had a good view of it at reasonably close quarters."—ELLIOTT COUES, *Washington, D. C.*

THE BLACK-THROATED BUNTING IN FLORIDA.—Neither Professor Allen in his "Winter Birds of East Florida," nor Mr. Maynard in his work on the birds of Eastern North America, includes the Black-throated Bunting (*Spiza americana*) as an inhabitant of Florida; hence the following note of its capture there may be worth recording. While walking along the fence row of an old field near Fernandina on April 22d, 1881, looking for Shrikes and Ground Doves, I heard the familiar note of this well-dressed Bunting in a small tree near the fence. He was immediately secured, but although I afterwards searched diligently for others, none were found.—C. W. BECKHAM, *Bardstown, Ky.*

DISTRIBUTION OF THE FISH CROW (*Corvus ossifragus*).—During a recent trip to Charlottesville, Albemarle Co., Virginia, I was much surprised to find the Fish Crow exceedingly common—quite as numerous, in fact, as the Common Crow (*C. frugivorus*). The locality in question is entirely surrounded by mountains—Monticello and Ragged Mountains to the east and south, the Blue Ridge only about twelve miles to the westward—and is distant at least sixty miles from the nearest tide-water.—ROBERT RIDGWAY, *Washington, D. C.*

THE SWALLOW-TAILED KITE (*Elanoides forficatus*) TAKEN IN SOUTHERN MICHIGAN.—Two fine specimens, male and female, of the Swallow-tailed Kite, were taken near this place, June 19, 1882, by Mr. Charles Chittenden. When first discovered by him they were foraging about his dove house, and causing a great commotion among the inmates.

The female was shot and instantly killed, while her mate, who was only slightly wounded, was secured alive. The latter is now in the possession of Dr. N. Paquette of Petersburg. They were properly identified by comparison with a nicely mounted specimen in my collection, which came

from Georgia. As far as I am aware this is the first recorded capture of this species within the State. Dr. Morris Gibbs in his List of the Birds of Michigan, 1879, admits it on the authority of Hon. D. D. Hughes of Grand Rapids, but cites no recorded example having been taken.—JEROME TROMBLEY, *Petersburg, Munroe County, Michigan*.

GARZETTA CANDIDISSIMA AT NANTUCKET, MASSACHUSETTS.—Visiting the above-named island, Aug. 12, 1882, I saw in the shop of Mr. H. S. Sweet, a mounted specimen of the Little White or Snowy Egret, which he said was shot near the south-west shore, at Hummock pond, last March, by one of the men of the Life-saving Station. A straggler to New England, the species has occurred far less frequently than its larger relative the White Heron (*Herodias egretta*), and this capture in early spring is remarkable.—H. A. PURDIE, *Newton, Mass.*

THE SNOW GOOSE (*Chen hyperboreus*) AT SING SING, NEW YORK.—On the morning of April 9th, 1882, a large flock of two or three hundred Snow Geese visited this place. They alighted several times at the mouth of the Croton, where it empties into the Hudson, but being disturbed by the gunners, who were anxious for a shot at them, they at last flew farther up the river. I examined them by the aid of a powerful field-glass, at a distance of a few hundred yards, and being on elevated ground I could look down upon the flock and easily distinguish the black wing-tips of the adults as they flew. A few days previous I saw a single individual flying, who seemed to be taking the lay of the country. I was informed that the flock again passed down the river on the night of the 10th.—A. K. FISHER, M. D., *Sing Sing, N. Y.*

NOTE ON THE LONG-TAILED DUCK.—On February 5, 1881, one of my friends procured a male specimen of the Long-tailed Duck (*Harelda glacialis*), at Latrobe, Westmoreland Co., Pennsylvania. The bird was shot on the only unfrozen spot noticed on the creek at the time—it was during the coldest “snap” of the season—and was in a very emaciated condition. The occurrence of this species so far inland (west of and near the mountains) is noteworthy. It was altogether unknown to the gunners thereabouts, and was brought to me for identification.—CHAS. H. TOWNSEND, *Acad. Nat. Sciences, Philadelphia*.

LOMVIA ARRA BRÜNNICHI AND L. TROILE IN NEW ENGLAND.—Mr. Merrill's note on these birds in the July number of this Bulletin (p. 191) was a timely correction of a long established error, for the common Murre found in winter off the New England coast is, as he has stated, *Lomvia arra brünnichi*, and not *L. troile*. At different times during the past ten years I have examined specimens from various points along the shores of Maine, New Hampshire, and Massachusetts, and all of the numerous birds that have come under my notice have proved to be Brünnich's

Guillemots. Indeed the example of *L. troile* mentioned by Mr. Merrill is the only New England one of which I have any knowledge. Dr. Coues says that the young of *L. troile* in their first winter plumage "are colored precisely like the adults, but may be always distinguished by their much shorter and slenderer bills which are in great part light colored (yellowish)." \* If the latter peculiarity be constant it will afford a ready mark of distinction between young of the two species, for the bill in young *brünnichi*, so far as I have seen, is invariably black.—WILLIAM BREWSTER, *Cambridge, Mass.*

RARE WARBLERS IN MASSACHUSETTS.—In the wonderful flight or bird-wave, especially of the *Mniotiltidae*, that took place with us May 21 and 22 last, and for some species continued during a few succeeding days, three Mourning Warblers, all males, were shot near Fresh pond, Cambridge. These, in the flesh, were kindly shown me by Mr. C. J. Maynard.

At Framingham, † on the above-named dates, Mr. Browne and myself identified twenty species of Warblers—among them specimens of the Cape May, Tennessee, and Bay-breasted; of the last two several were obtained in Eastern Massachusetts. Among New England Warblers, collectors here consider *Geothlypis philadelphia* to be the rarest, and *Dendræca tigrina* next in scarcity. *Helminthophila peregrina* and *Dendræca castanea* follow, though in the fall migrations this latter species occurs in moderate numbers with more or less regularity.—H. A. PURDIE, *Newton, Mass.*

THE UNUSUAL "WAVE" OF BIRDS DURING THE SPRING MIGRATION OF 1882.—A note by Dr. Coues in the July Bulletin ‡ describes the remarkable "tidal wave" of our smaller birds that occurred at Washington, D.C., during the spring migration this year, and it may be worth while to throw a little light upon its further course.

As Dr. Coues says, the vast number of birds was doubtless due to the cold and rainy weather that prevailed, checking the progress of the migration beyond the latitude of Washington. When the weather changed, the gradually accumulated throng was let loose, and rushed in a great wave towards the northern breeding grounds. In the vicinity of New York, as I learn from my friend Mr. J. Dwight, Jr., after prolonged cold and wet weather a change came on the morning of May 20, and with the pleasant weather the rush of birds began. Almost all the Warblers and Thrushes were in great numbers, and continued very abundant at least throughout the following day. In the latitude of Boston birds had been unusually scarce for some days. The change to clear and warmer weather took place about noon of the 21st, and before the rain ceased the rush of birds had begun. All day long the smaller birds came in

\* "Monograph of the Alcidae," Proc. Phila. Acad., Vol. XX, 1868, p. 77.

† See F. C. Browne, Forest and Stream, Vol. XVIII, June 15, 1882, p. 386.

‡ Vol. VII, p. 185.



unheard of numbers, stopping awhile to feed, and then hurrying on. The next morning the host was even greater, and the trees fairly swarmed with Warblers. Before noon of that day most of the birds had passed on, but for a day or two afterward the number of loiterers was sufficient to be noticeable, compared with ordinary migrations, though they seemed but a few stragglers after the army that had swept over the country during the previous days. Almost all the species of Warblers that occur in the spring migration through New England were observed. Among the rarer ones were *Helminthophila peregrina*, *Dendræca tigrina*, *D. castanea*, and *Geothlypis philadelphia*. A White-crowned Sparrow was also shot in Cambridge.

Dr. Coues suggests that the cold wave spoken of by Mr. King\* was the cause of this accumulation of birds. Such could hardly have been the case, as that occurred on the 21st and 22d, whereas by that time the accumulated hosts had reached Massachusetts.

It would be interesting to hear further of the course and magnitude of this "bird wave" as observed at other points.—CHARLES F. BATCHELDER, Cambridge, Mass.

#### BIRDS NEW TO OR RARE IN THE DISTRICT OF COLUMBIA.

1. BEWICK'S WREN (*Thryomanes bewicki*). An adult ♂, taken at Arlington, Virginia (immediately opposite Washington), April 10, 1882, by W. Palmer, is in the collection of the U. S. National Museum (No. 86,218).

2. YELLOW-THROATED WARBLER (*Dendræca dominica*). The National Museum also possesses a fine young ♂ of this species, taken at Arlington by Mr. Palmer, September 7th, 1881 (No. 84,858).

3. LOGGERHEAD SHRIKE (*Lanius ludovicianus*). Several specimens of this irregularly distributed, and everywhere more or less local, species, have within the last few years been taken in the vicinity of Washington, and are now in the collection of the National Museum. Most if not all of them were obtained in winter.

4. SHARP-TAILED FINCH (*Ammodromus caudacutus*). In the mounted collection of the National Museum there is a fine adult of this species labeled, "Washington City, September, 1862; C. Drexler." (Nat. Mus. Catal. No. 25,905.)—ROBERT RIDGWAY, Washington, D. C.

NOTES ON SOME BIRDS AND EGGS FROM THE MAGDALEN ISLANDS, GULF OF ST. LAWRENCE.—The following notes, made by Mr. M. A. Frazar during a collecting trip to the Magdalen Islands in June and July, 1882, seem of sufficient importance to merit publication, although many of them are not absolutely new. Some of the points which they cover, however, have been previously involved in more or less obscurity, while the others will be none the worse for fresh data. The specimens described, and most of those mentioned, are now in the writer's collection, and the descriptions are on his authority.

1. *Dendræca striata*. BLACK-POLL WARBLER.—A set of three fresh eggs, identified by the capture of the female parent, was taken June 23.

\* This Bulletin, Vol. VII, p. 185.

The nest was built in a low, thick spruce which stood on the edge of a swamp, near a brook. It was placed on a horizontal branch at a height of about three feet, and was well concealed by the clusters of densely-imbricated needles above. Externally it measures 5 inches wide by 2.50 inches deep; internally 1.80 by 1.50 inches. The walls in places are 1.50 inches in thickness. The main body of the structure is composed of *Usnea* moss, weed-stalks, and dry grasses, closely matted and protected outwardly by coarser stalks and a few dead spruce twigs. The lining is of slender, black moss-stems (which curiously resemble horse-hair), cows'-hair, and a few feathers. The whole affair is remarkably solid and bulky for a Warbler's nest.

The eggs are white, with brown specks scattered over the general surface of the shell and numerous spots and blotches of reddish-brown and lavender about the larger end. They measure respectively  $.75 \times .56$ ,  $.76 \times .56$ , and  $.75 \times .57$ .

2. ***Pinicola enucleator***. PINE GROSBEEK.—The Pine Grosbeak was apparently rare among the Magdalens for Mr. Frazar met with only five individuals, four of which were secured. The first pair, taken June 18, on Amherst Island, evidently had a nest among some low spruces, for both birds showed unmistakable signs of anxiety when the spot was approached, and the female proved, on examination, to be incubating. The female of the second pair, shot June 29, on Grindstone Island, had laid all her eggs but one, which, although in the oviduct and of full size, was unfortunately without a shell. Mr. Frazar searched long and carefully for both nests but without success.

Our knowledge respecting the breeding of this Grosbeak, as found in America, is so very imperfect that the above data are both interesting and valuable. The inference is that the eggs are laid late in the season, a fact which the analogy furnished by kindred species would scarcely have suggested.

3. ***Loxia leucoptera***. WHITE-WINGED CROSSBILL.—Mr. Frazar met with these Crossbills on all the islands of the Magdalen group, where they were among the most abundant of the land birds. At the time of his arrival (June 6) they had already collected in large flocks which were composed chiefly of young birds and females, a company of fifty or more often containing only one or two males in red plumage. The latter were also found singly, and from the fact that such individuals were often in full song Mr. Frazar inferred that they might still be in attendance on sitting mates, or unfledged young. The average development of the numerous young birds collected would indicate, however, that the regular breeding-season was somewhat earlier, although none of them could have been hatched much before the middle of May. Assuming, then, that the past season was not an exceptionally late one, the proper time to look for fresh eggs in this locality would be not far from May 1.

As I can find no detailed description of the first plumage of this species I append the following:—

*Juv., first plumage* (♀, Magdalen Islands, June 14, 1882. M. A. Frazar). Entire plumage of head and body thickly streaked with dull black

on an ochraceous ground; greater and middle wing-coverts, with the tertials, broadly tipped with fulvous-white; primaries and rectrices black, edged with pale fulvous.

A male (June 26) somewhat older, but still in first plumage, differs from the specimen just described in having the dark streaks broader and blacker, the wing-bands nearly pure white, and the under parts less strongly ochraceous.

4. *Ægiothus linaria*. COMMON REDPOLL.—In his list of the birds of the Magdalen Islands,\* Mr. Cory included this species "with great hesitation," a single specimen, so badly mangled that it could not be positively identified, being the only one which came under his notice. Mr. Frazar, however, found it abundant on both Amherst and Grindstone Islands where many large flocks were seen feeding among the spruces. Owing to lack of time and the pressure of other duties he secured only two specimens, but as these are both in first plumage the breeding of the species there may be considered assured. The following description is taken from the younger of the two examples just mentioned.

*Juv., first plumage* (♂, Magdalen Islands, June 29, 1882. M. A. Frazar). Entire plumage of the head and body, excepting the throat, cheeks, and abdomen, thickly and coarsely streaked with dull black on a pale ochraceous or brownish-white ground; tips of the greater and middle wing-coverts with the outer edges of the tertials, ochraceous-white; throat black; cheeks brownish-ochraceous; center of the abdomen brownish-white and immaculate; no red on the vertex.

5. *Falco columbarius*. PIGEON HAWK.—A set of four eggs from Amherst Island was taken under the following circumstances: Mr. Frazar was passing a spruce-clad knoll surrounded by a boggy swamp, when he noticed a pair of Pigeon Hawks circling above the trees. Approaching, he quickly discovered their nest, built in a dense spruce at the intersection of a horizontal branch with the main stem and at a height of about ten feet. As he climbed the tree the Hawks, now thoroughly alarmed for the safety of their charge, dashed wildly about his head, frequently passing within a few feet and uttering shrill screams of anger or dismay. After taking the eggs he made a close examination of the nest, which was found to be very bulky—in fact "as large as a Crow's," and composed chiefly of bark with some coarse sticks surrounding the exterior, and a neat, soft lining of finer bark and *horse-hair*. From its general appearance he felt convinced that it was constructed by the Hawks themselves. This was June 9; returning five days later he found both birds flying about the knoll and their actions indicated that they had built another nest somewhere near, but it could not be found. As he was then on the point of leaving the island he shot the male, a fine adult specimen which accompanies the eggs.

The latter, now before me, are almost perfectly elliptical in shape, and measure respectively  $1.57 \times 1.27$ ,  $1.55 \times 1.23$ ,  $1.59 \times 1.24$ , and  $1.56 \times 1.25$ . The ground-color, in three of them, is apparently pinkish-buff, but this is

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\* "A Naturalist in the Magdalen Islands," p. 42.

almost wholly overlaid by numerous, nearly confluent blotches of dilute chocolate and purplish-brown which, with a few black spots and dashes, are uniformly spread over the entire surface of the shell. The fourth specimen has some immaculate spaces of creamy-buff about the smaller end, although the markings elsewhere are even denser than in the other three. The general coloring of these eggs is extremely rich and handsome and, excepting in size, they bear a close resemblance to the notoriously beautiful egg of the Duck Hawk. — WILLIAM BREWSTER, *Cambridge, Mass.*

SECOND ADDENDUM TO THE PRELIMINARY LIST OF BIRDS ASCERTAINED TO OCCUR IN THE ADIRONDACK REGION, NORTHEASTERN NEW YORK.\*

186. *Telmatodytes palustris*. LONG-BILLED MARSH WREN.—Dr. A. K. Fisher writes me that he took a nest and three eggs of this species at Lake George, in Warren Co., August 2, 1882.

187. *Passer domesticus*. HOUSE SPARROW.—Common in the villages along the outskirts of the wilderness, on both sides of the Adirondacks.

188. *Squatarola helvetica*. BLACK-BELLIED PLOVER.—Occurs along Lake Champlain during the migration.

189. *Charadrius dominicus*. GOLDEN PLOVER.—Very common about Lake Champlain during October in some seasons.

190. *Ægialites semipalmatus*. SEMIPALMATED PLOVER; RING NECK.—Abundant along Lake Champlain during the fall migration, arriving about the middle of September.

191. *Tringa canutus*. KNOT; ROBIN SNIPE.—Occurs during the migrations.

192. *Actodromas minutilla*. LEAST SANDPIPER.—Very abundant about Lakes George and Champlain during the fall migration.

193. *Pelidna alpina americana*. RED-BACKED SANDPIPER; AMERICAN DUNLIN.—Occurs during the migrations.

194. *Limosa fœda*. MARBLED GODWIT.—Sometimes tolerably common about Lake Champlain in October.

195. *Bartramia longicauda*. FIELD PLOVER.—Breeds in dry fields bordering the Adirondacks, on both sides of the mountains.

196. *Numenius longirostris*. LONG-BILLED CURLEW.—A specimen was shot near Plattsburg, on Lake Champlain, several years ago.

197. *Rallus virginianus*. VIRGINIAN RAIL.—Tolerably common about the borders of the wilderness.

198. *Chaulelasmus streperus*. GADWALL.—Rare. Mr. Henry Prentiss shot one on Lake Champlain in April, 1882.

199. *Dafila acuta*. PINTAIL.—Rather rare. Occurs both in spring and fall.

200. *Mareca americana*. BALDPATE.—Rare along Lake Champlain.

201. *Fuligula marila*. SCAUP DUCK.—Occurs during the migrations, but is not common.

\* See this Bulletin, Vol. VI, p. 225, and Vol. VII, p. 128.

202. *Fuligula affinis*. LITTLE BLACKHEAD. — Tolerably regular fall migrant. Taken on Lake Champlain.

203. *Fuligula vallisneria*. CANVAS-BACK. — Rare fall migrant.

204. *Fuligula americana*. REDHEAD. — Rare. Has been killed on Lake Champlain in November.

205. *Larus glaucus*. GLAUCOUS GULL; ICE GULL. — I have seen a specimen of this boreal species that was killed while feeding on carrion, in the town of Bangor in Franklin Co., about two years ago. — C. HART MERRIAM, M.D., *Locust Grove, N. Y.*

LIST OF ADDITIONS TO THE CATALOGUE OF NORTH AMERICAN BIRDS. — In this Bulletin for January, 1882 (page 61), there was published a list of species of birds which had been added to the fauna of North America since the publication of the last "Smithsonian" catalogue, or *Nomenclature of North American Birds*. I now give a list of subsequent additions for the benefit of those who, for various reasons, are not able to "keep the run" of all the new discoveries; and a supplement with each number of the Bulletin is contemplated, in order that all interested may keep posted in the matter.

The number prefixed indicates the position of each species in the catalogue in question.

2a. *Hylocichla fuscescens salicicola* Ridgw. WILLOW THRUSH. — Proc. U. S. Nat. Mus., Vol. IV, 1882, p. 374. (Rocky Mountain district of U. S.)

3a. *Hylocichla aliciae bicknelli* Ridgw. BICKNELL'S THRUSH. — Proc. U. S. Nat. Mus., Vol. IV, 1882, p. 377. (Breeding on the Catskill Mts., New York.)

35a. *Chamæa fasciata henshawi* Ridgw. PALLID GROUND TIT. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 13. (Interior of California.)

38a. *Lophophanes inornatus griseus* Ridgw. GRAY TITMOUSE. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 344. (Middle Province of U. S.)

55b. *Certhia familiaris montana* Ridgw. ROCKY MOUNTAIN CREEPER. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 114. (Middle Province of North America.)

55c. *Certhia familiaris occidentalis* Ridgw. CALIFORNIA CREEPER. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 115. (Pacific coast of U. S.)

59b. *Catherpes mexicanus punctulatus* Ridgw. PUNCTULATED WREN. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 343. (California.)

69.\* *Motacilla ocularis* Swinh. SWINHOE'S WAGTAIL. — Cf. Proc. U. S. Nat. Mus., Vol. IV, 1882, p. 414. (La Paz, Lower California; straggler from eastern Asia.)

93.\* *Dendroeca vieilloti bryanti* Ridgw. CHESTNUT-HEADED YELLOW WARBLER. — *Dendroeca vieilloti* var. *bryanti* Ridgw., in Hist. N. Am. B., I, 1874, p. 218. Cf. Proc. U. S. Nat. Mus., Vol. IV, 1882, p. 414. (Common at La Paz, Lower California.)

122.\* *Geothlypis beldingi* Ridgw. BELDING'S YELLOW-THROAT. — Proc. U. S. Nat. Mus., Vol. V, 1882, p. 344. (San José del Cabo, Lower California.)

144*a*. **Vireo huttoni stephensi** Brewst. STEPHENS'S VIREO.—Bull. Nutt. Orn. Club, Vol. VII, July, 1882, p. 142. (Arizona and New Mexico.)

230*b*. **Peuceea ruficeps eremœca** Brown. ROCK SPARROW.—Brown, Bull. Nutt. Orn. Club, Vol. VII, Jan. 1882, pp. 26, 38. (Kendall Co., Texas.)

297*c*. **Perisoreus canadensis nigricapillus** Ridgw. LABRADOR JAY.—Proc. U. S. Nat. Mus., Vol. V, 1882, p. 15. (Labrador.)

311*a*. **Myiarchus mexicanus cooperi** (Baird.) COOPER'S FLY-CATCHER.—*Myiarchus cooperi* Brewst. Bull. Nutt. Orn. Club, Vol. VI, Oct. 1881, p. 252. (Camp Lowell, Arizona.)

354*a*. **Caprimulgus vociferus arizonæ** (Brewst.). STEPHENS'S WHIP-POOR-WILL.—*Antrostomus vociferus arizonæ* Brewst. Bull. Nutt. Orn. Club, Vol. VI, April, 1881, p. 69. (Arizona.)

402*e*. **Scops asio bendirei** Brewst. CALIFORNIA MOTTLED OWL.—Bull. Nutt. Orn. Club, Vol. VII, Jan. 1882, p. 31. (California.)

452.\* **Gyparchus papa** (Linn.). KING VULTURE.—*Sarcorhamphus papa* Coues, Bull. Nutt. Orn. Club, Vol. VI, Oct. 1881, p. 248. (Rio Verde, Arizona.)

475*a*. **Lagopus mutus reinhardti** (Brehm.). GREENLAND PTARMIGAN.—Cf. Turner, Proc. U. S. Nat. Mus., Vol. V, 1882, p. 229. (Greenland and west side of Cumberland Gulf.)

475*b*. **Lagopus mutus atkhensis** Turner. ATKHAN PTARMIGAN.—Proc. U. S. Nat. Mus., Vol. V, 1882, p. 230. (Atkha Island, Aleutian chain.)

486.\* **Ardea wardi** Ridgw. WARD'S HERON.—Bull. Nutt. Orn. Club, Vol. VII, Jan. 1882, p. 5. (Oyster Bay, West Florida.)

569.\* **Rallus beldingi** Ridgw. BELDING'S RAIL.—Proc. U. S. Nat. Mus., Vol. V, 1882, p. 345. (Espiritu Santo Island, Gulf of California.)

701.\* **Diomedea melanophrys** Temm. SPECTACLED ALBATROSS.—Cf. Bean, Proc. U. S. Nat. Mus., Vol. V, 1882, p. 170. (Off coast of California, in lat. 40° 30' N., long. 142° 23' W.)—ROBERT RIDGWAY, *Washington, D. C.*

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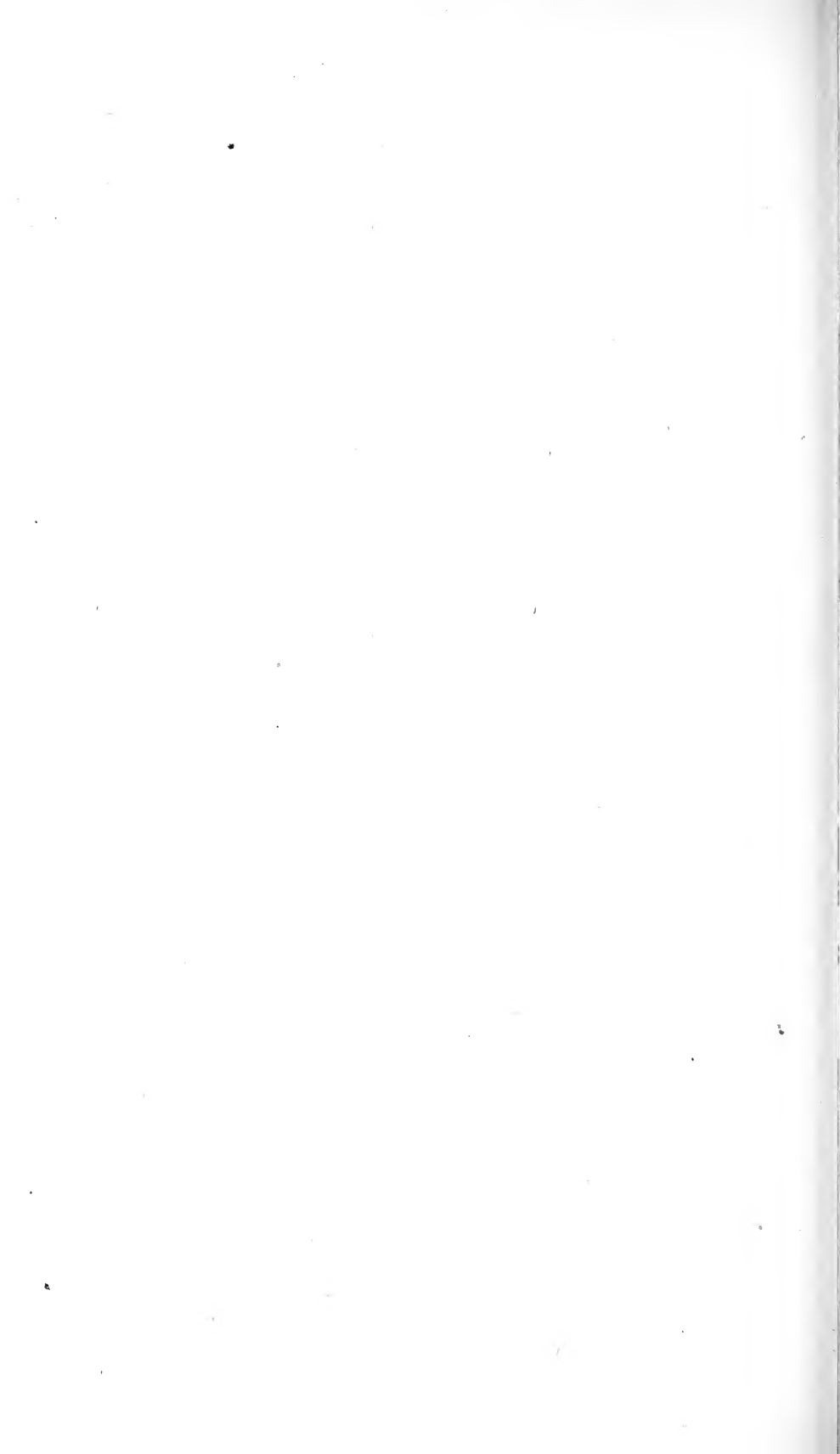
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## ERRATA.

- Vol. VI, page 199. line 10, for "centimeters" read "millimeters."  
 " VII, " 9. " 12, for "BLUE-WINGED YELLOW" read "GOLD-EN-WINGED."  
 " " " 26, " 6, for "An indistinct, dusky" read "A black."  
 " " " 26, foot note, for "οὐκέω" read "οἰκέω."  
 " " " 47, " " line 3, for "Water" read "Winter."  
 " " " 119, line 8, for "struggling" read "straggling."  
 " " " 122, " 9 from bottom, for "Rellon" read "Redlon."  
 " " " 123, " 28, for "Before" read "Upon."  
 " " " 164, " 11, for "chince" read "china."  
 " " " 165, " 31, for "Poulet Dean" read "Poulette d'Eau."  
 " " " 178, " 3, for "Cincinnati" read "Cincinnati."





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# BULLETIN

OF THE

## NUTTALL ORNITHOLOGICAL CLUB.

VOL. VIII.

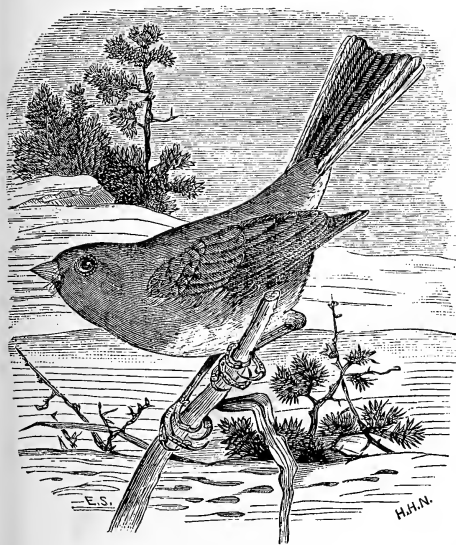
JANUARY, 1883.

No. I.

### THE COMPLIMENTS OF THE SEASON.

BY DR. COUES.

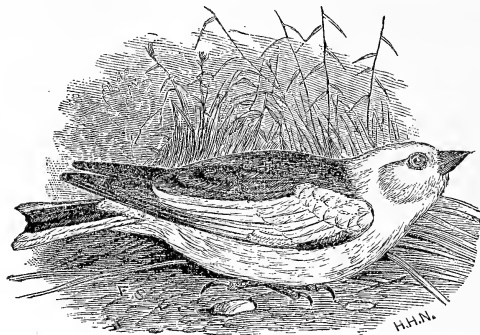
Since we sent out the last number of the Bulletin, a great many of our feathered friends have called upon us to pass the compliments of the season, congratulating us upon the close of the seventh volume of their chronicles, and encouraging us to hope for their distinguished patronage of the eighth fascicle of their *Fasti*. On looking over our autograph album we find a number of cards left by our New Year's callers, so prettily engraved that we are sure our readers will be pleased to look over some of the lot.\*



One of the earliest was *J. hiemalis*, who said he had spent the summer very pleasantly with his family on the boundary line between the Canadian and Alleghanian Faunæ which was run in 1871 by Mr. Allen, after some earlier preliminary surveys by Prof. Verrill. He was to pass the winter in Washington, where he desired the BULLETIN to be sent to him, addressed to the care of the Smithsonian Institution, as he

\* Ad viv. del. Edwin Sheppard, Philadelphæ; xylogr. H. H. Nichols, Washington-op.: permissu superiorum, Estes et Lauriat, Boston.

expected to call upon Mr. Ridgway and Mr. Henshaw, in the South Tower, and hoped to find them both well.



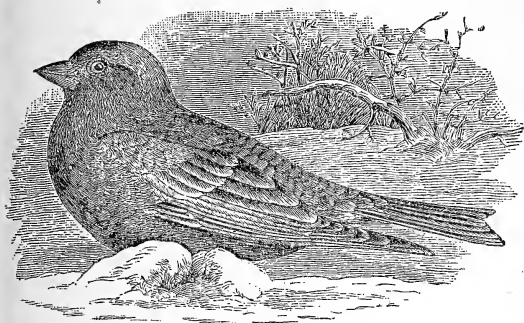
*P. nivalis* and his cousin *P. lapponicus* apologized for appearing in unseasonable costume, explaining that they had left in such a hurry, owing to an unexpected change in the weather, that they had really not had time to change their dress. They left pleasant words for Mr. Brewster, in recognition of his papers on the Birds of Arizona, and wished us to thank Mr. Purdie for his kind assistance in finishing the second volume of "New England Bird-Life." They expected to be about all winter and would see us again later.

A rosy little fellow, *A. linaria*, was kind enough to assure us personally that he had forgotten all about the trouble we made in his family in 1860, when we visited him in Labrador, and afterward spoke so shabbily of his appearance. His brother *exilipes*, he added, had settled in Siberia, where at last accounts he was doing as well as could be expected.

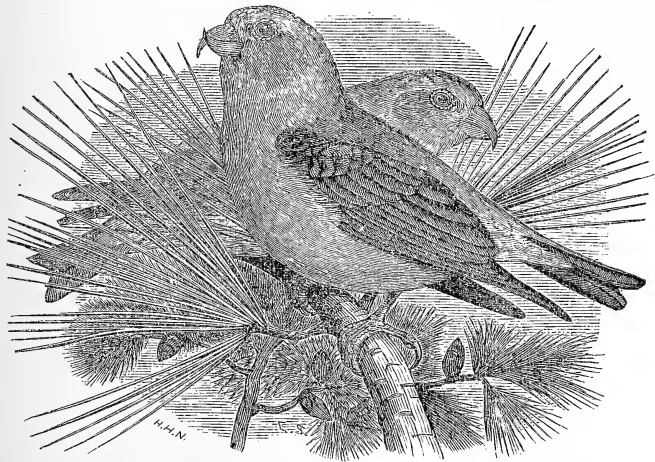


though the family affairs were still somewhat involved,—too many lawyers, since the death of *fuscescens* and *rostratus*, and the extension of the *canescens* estate beyond Greenland. He begged to hand us the card of a western relative, *Leucosticte tephrocotis*,

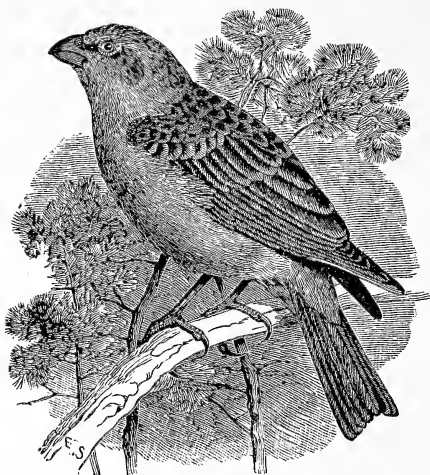
to be forwarded to Mr. J. M. Wade of Norwich, Connecticut, with best wishes for the success of the "Ornithologist and Oölogist," which he thought much improved in health and spirits of late.



*Loxia curvirostra* called with his better half, a compliment which we appreciated highly. In spite of the slight impediment in their speech we understood that they wished to call our attention to the increasing number of ornithological articles contained



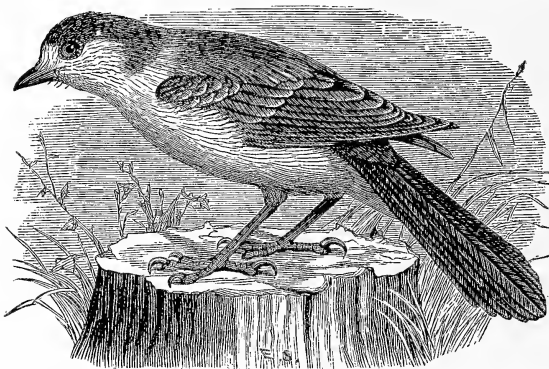
in the Bulletins of the United States National Museum, as showing that Professor Baird's first love still touched his own heart, as it did the hearts of his unnumbered friends and disciples. They expected to go to house-keeping early in March.



*P. enucleator* spoke of his recent visit to "Forest and Stream," where he was so pleasantly received, and where he found ornithological matters so ably conducted by his friend Mr. George Bird Grinnell.

One of our visitors did not, we regret to say, make himself entirely agreeable. *Perisoreus* was inclined to be cynical, and entirely too inquisitive, besides professing to know too much. He

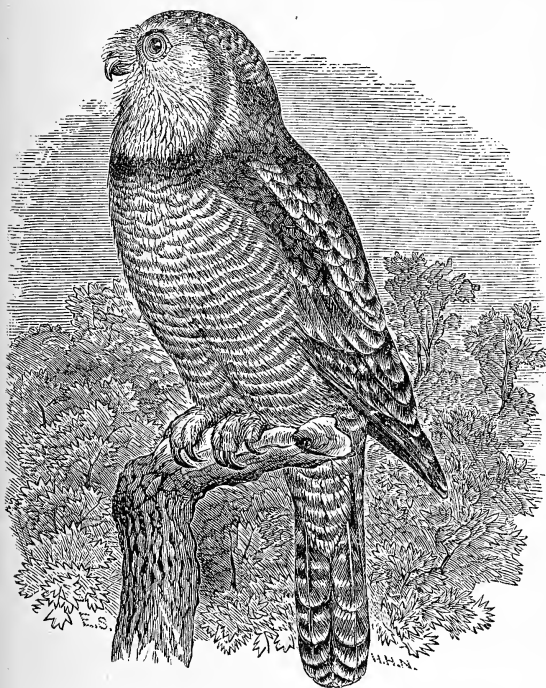
wanted to inquire when the Water Bird volumes of the Baird, Brewer and Ridgway "History of North American Birds" would be out, and whether the second volume of the "Birds of the Colorado Valley" would ever appear. We told him plainly that was



*nullum sui negotii.* He wondered why Professor Cope did not pay more attention to birds in the "American Naturalist." He wanted to know what had become of Mr. T. G. Gentry; and whether Dr. C. H.

Merriam was likely to do the Birds of the Adirondacks as handsomely as he executed the Mammals; and whether Mr. Frank R. Rathbun's "Birds of Beauty" were likely to be a joy forever; and whether Mr. C. B. Cory's Birds were more or less beautiful than usual. He asked us if we knew (fancy a miserable Whiskey-jack asking editors "if they knew"!) that Studer's Jasper's "Birds of America" was having a good run; that the official reports of Mr. E. W. Nelson and Mr. L. M. Turner were to be illustrated with colored quarto plates by Mr. Ridgway; that the Rev. J. H.

Langille of Buffalo had completed a work upon New York Birds; and that the new "Avifauna Columbiana," to be published with illustrations under the auspices of the Biological Society of Washington, had gone to press. This was cool, considering that Dr. D. W. Prentiss and ourselves were the authors of the work, as we informed him, and accepted his apology. In fact the only graceful things the saucy gossip had to say were respecting the "Nests and Eggs of the Birds of Ohio," which work he hoped would meet with all the success it so well deserved.



Our little visitors seemed in some hurry to be off when our next caller was announced. *Surnia* was polite and dignified, as usual. He had heard, he said, that we were about to publish a new edition of the "Key," which he trusted would be much more handsomely illustrated than the former one, and, as his own contribution to that end, offered us a striking likeness of himself. He re-

marked with grim humor that as the plan of the work included a treatise on the anatomy of birds, he was at our service for any dissections we might wish made. But this being rather a delicate subject, the conversation turned upon late catalogues and nomenclators of North American Birds. *Surnia* complained with some warmth, that, like the old woman in Mother Goose, he hardly knew whether he was himself or somebody else. He begged to suggest the propriety of calling a Congress of American Ornithologists to discuss, vote upon, and decide each case in which

the doctors disagreed, the proceedings to be published in the NUTTALL BULLETIN and the congressmen to bind themselves to abide by the decision of the majority. The plan seemed to him perfectly feasible, and probably the only way to secure the greatly desired uniformity of nomenclature. Not forgetting to inquire politely respecting our "Ornithological Bibliography," the progress of which, he understood, had been arrested by the War Department at Washington, and begging to be remembered to all absent Nuttallians, *Surnia* bowed gravely and withdrew.

Among all our callers there was not one who did not ask particularly after our beloved and respected Editor-in-chief, expressing the warmest sympathy with him in his long illness, and their sincere hopes for his speedy and perfect restoration to health.

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## NEW BRUNSWICK NOTES.

BY M. CHAMBERLAIN.

Among other interesting ornithological occurrences with which the year 1882 favored observers in the vicinity of St. John was the presence of some six pairs of Pine Grosbeaks (*Pinicola enucleator*) during the entire summer, in a heavy growth of mixed woods, covering the crest of a hill overlooking the Kennebecasis River a few miles from the city.

They were first seen on June 11, when Mr. James W. Banks accidentally shot a female in the very act of arranging some dry grass on a partially formed nest. It was placed in a small spruce some seven feet from the ground and close to the trunk. About a handful of this grass, unmixed with other material, had been laid firmly upon a limb, not woven together, but appearing more like a platform for the main structure to rest upon, than the bottom of a nest. When first seen the male and female were together gathering grass on a hummock close by, and both seemed equally busy. When his mate was killed the male became much excited and exhibited deep distress, continuing for some time within three or four feet of Mr. Banks, as he sat examining the dead bird, and once alighting on a bough close to his head and

peering over his shoulder. Upon dissecting the female the eggs were found to be in an advanced condition.

During the season the remaining pairs were seen very often and closely watched, but though they were undoubtedly mated no completed nest was discovered. As the birds were exceedingly tame and easy to approach, their plumage was closely examined. No red coloring was observable, and so little difference was apparent between the males and the females that the sex could not be determined without the aid of a glass, at more than ten paces distant. During the breeding season they sang occasionally but not loudly, their song being a short and rather simple, though sweet-toned melody, which increased in strength of tone and duration toward autumn.

Last spring the Song Sparrow and the Fox Sparrow reversed the usual order of their coming, for on March 6, while we were looking for the appearance of the latter, the former species arrived in the vicinity of St. John in large flocks, accompanied by a few of their White-throated cousins.

In 1881 the Song Sparrow first appeared here on April 11, which is about an average date for their arrival. From the time of their coming in 1882 until late in April they must have been sorely pinched for food, for winter was still with us, and cold snow-storms were of frequent occurrence. During this period the birds were constantly about the streets of the city, and in the early morning thronged the wharves and busiest thoroughfares. They were also found along the shore, but their chief resort was the large tract of sand flats at the back of the town, which at low water are bare, but with each recurrence of the tide are covered by the waters of the Bay of Fundy. The mouths of the sewers emptying upon these sea-washed sands were the favorite feeding places for all the early comers, and through April a rather motley company were daily seen there together. Snow-birds, Fox, Song, and White-throated Sparrows, Robins, and Purple Finches, became shore-birds for the time, and about the middle of the month a party of Hermit Thrushes added their dignified presence to the gathering, while a squad of Crows gravely stalked about as undisturbed as if always accustomed to such high-bred society, their sombre coloring forming a marked contrast with the white plumes of the Herring Gulls who posed for a background just where the incoming waves curled and broke upon the sands.

It was among one of these groups, feeding nearest the seaward point of the flats, that Mr. Alfred Morrissey discovered a flock of Ipswich Sparrows (*Passerculus princeps*) on April 11. The species was new to this locality, for Mr. Brewster's solitary individual, taken at Point Lepreaux in April, 1876 (as recorded in this Bulletin, Vol. I, p. 52), is the only instance of its occurrence previously known. Of the birds as they appeared to Mr. Morrissey he says: "When I first saw the Ipswich Sparrows they were in company with Song Sparrows, their actions being so nearly identical that the species could only be distinguished by the difference in the length of the tail and the general color of the plumage, that of the Ipswich being somewhat the lighter.

"There were some twenty individuals in the flock, and, as they were very tame, allowing me to approach within a few yards, I was enabled to easily watch their movements during the few days they remained, they feeding always in one locality. Most of the weather while they were here was stormy, but they appeared indifferent to it and were very active, picking about in the sand, even in a snow-squall, hopping around and taking short flights, all the while uttering a sharp chirp, but not attempting any song. Of the few specimens I secured, one was merely wounded, and I placed it in a cage with a Canary, where it lived for a week, being fed during the entire time by the Canary. It was exceedingly tame, allowing one's hand to be put in the cage without disturbing it in the slightest degree."

The Fox Sparrows did not put in an appearance in the vicinity of St. John until "April-fool's day," a full week after the Wild Geese were first seen going northward. They are rarely observed here after the third week in March, but this year they remained fully a month later. By the fifth day of April they had gathered in immense numbers and were in full song. Everywhere about the city and suburbs, and at all hours, in the early dawn and in the gloaming as well as at noonday, alike indifferent to storm or sunshine, they sang as if singing were the end and aim of their existence. But theirs is a song that one does not soon tire of; indeed to my ear it is more beautiful than that of any other member of the family, entitling the species to high rank among our northern songsters. Of course such eminent performers as the Winter Wren and Hermit Thrush take precedence, and in the song of the present bird we miss many qualities for which other



species are admired. Its voice has neither the compass of the Catbird's nor the volume of the Purple Finch's, while it lacks the free abandon of the Bobolink's and the sentiment so sweetly voiced by the Vireo when he "whispers his secrets to the passing breeze." The chief characteristics of the song of the Fox Sparrow are sweetness and purity of tone, and rare beauty of expression; and in these he stands the peer of the ablest of his rivals.

When I included the Indigo Bird in my catalogue of the Birds of New Brunswick I had some misgivings as to its right to a place there; but that right has been established by an example taken at Rothesay by Mr. Henry Gilbert, in May last, and by others observed by Mr. Gould. On the 24th of the same month the occurrence of the Bluebird near St. John was confirmed, for I shot a pair at Westfield, evidently mated. I also know of numerous others having been taken or seen during the summer.

In May a small flock of Ring-necked Plover (*Aegialites semipalmatus*) and Peeps (*Actodromas minutilla*) spent a few days near St. John; although both of these species are very abundant here for several weeks in the autumn they have not before been known to occur in the spring. Piping Plover (*Aegialites melodus*) too were taken here last spring for the first time, though I am not certain that more than four specimens were observed. Two of these were shot by the Baron de Tuiyll, and are now in the collection of the Natural History Society here.

The Titlark (*Anthus ludovicianus*) must also be added to the list of species occurring in St. John County, as numerous large flocks were seen here in October last.

Another of the occurrences for which the year is remarkable is that of a Whistling Swan (*Cygnus americanus*), one having been secured by George Barnhill, Esq., on April 8, at Belvidere Lake about twenty miles northwest from St. John. It was in immature plumage, but the sex was not ascertained. When first seen it was on the wing a short distance behind a flock of Wild Geese, and it followed these into an opening in the Lake, though keeping entirely separate from them.

The late records in the Bulletin by Mr. Harry Merrill and others, regarding the rarity of *Lomvia treile*, prompt me to add my quota of information, which will support the facts already recorded, as I have known of but two examples of this species occurring in this vicinity in ten years. There is not, however,

near St. John, any good collecting ground for this class of sea-birds; for many species reported as common at the mouth of the Bay of Fundy have not been taken here. *L. arra bruennichi* is an example of these.

From several letters received I am led to suspect that the correctness of the statement, made in my catalogue, that the Hudsonian Chickadee breeds in New Brunswick, has been questioned. There need not be the slightest doubt on this point, as I have seen four nests here; one in 1878, built in a stump; another in 1880, built in a telegraph post close by the railway station at Sutton; and two during last season. Of the latter, one was found near Edmunston by Mr. H. A. Purdie, and the second was found by Mr. J. W. Banks in the suburbs of St. John. These two were so similar, in position as well as construction, that a description of one will serve equally well for both. They were built in decayed stumps (apparently of firs or spruces) some three feet high and five inches in diameter. The entrance was from the top of the stump, and for the first six or eight inches was about two inches wide; then it widened gradually to three inches, which latter width was carried down another six inches to the bottom of the excavation. On the bottom a platform of hard-packed, dry moss had been placed, and upon this a second platform of felt, or felted hair, of a bluish-ash color (probably the inner fur of the common hare), and on this base rested the cup-shaped nest, which was also composed of this same felted fur. The walls of the nest were constructed with great neatness and precision, and were about two and one-half inches high and half an inch thick. In the nest found by Mr. Purdie the walls and lining were composed exclusively of fur, but in that found by Mr. Banks there was a considerable quantity of cow's hair interwoven, or rather felted, with the fur. I saw the nest at Edmunston on June 14, and the young in it were then but sparsely clothed with down and showing little signs of feathering; and when I examined the nest near St. John, on July 1, the five young which it contained were in much the same stage of development as those in the former nest had been.

In March last I witnessed a scene which convinced me that the saying "misery loves company" is as truly applicable to birds as to men. It was a keen, frosty morning in the third week of the month, a day as typical of midwinter as any that January brings us, for the snow still lay deep and firm upon the ground and

neither lakes nor streams had thawed; while the dry, thin air, though stirred by no wind, was so intensely cold that I was forced to walk very briskly and administer frequent rubs to nose and cheeks to keep at all comfortable. Passing along a suburban road about sunrise, my attention was attracted by the note of a Robin, which I soon discovered perched on a tree near by, wearing an appearance of utter wretchedness. His body was contracted as if by pain, his feathers were ruffled, and his head drooped. At long intervals he gave voice to a feeble, sad-toned note, and crouching thus, shivering with cold, hungry no doubt, and forlorn, appeared, physically and morally, but the ghostly shadow of that sprightly and vivacious Robin Redbreast that had filled the air with his blithesome carol in the happy spring-time. As I stood watching him I heard another note. Robin heard it also, and arousing a little called back. The new note was repeated and I recognized the voice as that of a Red-eyed Vireo, which I detected searching for a breakfast on the leafless branches of a distant birch. Robin's appearance was at once changed; his body and head were held erect, his feathers smoothed, and his voice rang out clear and strong. After a few more calls and a few strains of song both birds flew to a tree about mid-way between their first positions, and on approaching it to obtain a more certain identification of the Vireo, I found the pair sitting side by side on the same limb, their faces turned toward the newly-risen sun, singing away as merrily as if cold and hunger were unknown to them, or at least uncared for. They seemed indeed a joyous pair, yet there was something singularly pathetic in their very happiness. Possibly the Robin might contend successfully against the severity of our weather, as I have known many of his race to do before him. But the Greenlets ordinarily remain with us only during the warmest weather and this thoughtless fellow would, I feared, be unable to withstand the cold without a generous supply of insect food, which he would find it impossible to obtain.

After all, mused I, as I turned away, leaving the oddly assorted pair still singing, what better ending for such a life as a bird's could be desired! The cold-benumbed brain registers no pain, nor creates other than pleasing fancies. And how appropriate a death for so fairy-like a creature — to fall peacefully asleep upon the virgin snow, with the wind weaving over his stiffening form a shroud of glittering crystals.

BICKNELL'S THRUSH (*TURDUS ALICLÆ BICKNELLI*) IN NEW ENGLAND.

BY WILLIAM BREWSTER.

Upon reading Mr. Bicknell's article in the July number of this Bulletin (pp. 152-159) it occurred to me that his new Thrush must breed on our New England mountains as well as among the Catskills. This conviction was strengthened, shortly afterwards, by a letter shown me by Mr. Purdie, in which the writer, Mr. Bradford Torrey of Boston, asked if *Turdus aliciae* was known to summer among the White Mountains, he having heard a Thrush there which he felt sure was neither the Wilson's, the Olive-backed, nor the Hermit. Acting upon the double hint I took an early opportunity to look for the interesting bird, with the following result.

On the afternoon of July 19, 1882, I started up the Mt. Washington carriage-road from the Glen House, in company with Mr. Walter Deane and Mr. James J. Greenough of Cambridge. At first our choice of a time proved unfortunate, for a succession of heavy showers prevented us from exploring the dripping thickets by the way, and forced us to push on as rapidly as possible, so that we reached the summit, shortly after dark, without having shot a bird of any kind. Thrushes were heard at various points, however, and the peculiar notes of a few met with near the Half-way House led us to hope that our quest would not prove in vain.

The following was one of those rare mornings that mountain climbers long for but seldom get. The sky was cloudless, and as the sun rose above the horizon its rays gilded the snowy banks of fog that marked the courses of distant rivers, and, touching the eastern sides of the surrounding mountains, bathed every rugged slope and beetling precipice in a flood of light, the brighter from its contrast with the gloom that still enveloped their western sides and shrouded the mysterious depths of dark ravines far below. The keen, almost frosty morning air rustled among the scant vegetation, and an occasional stronger puff heralded the coming blasts which, with other retainers of Winter's train, are

never quite banished from these elevated regions, even during mid-summer. But time was precious, and barely pausing to admire the grandeur of the scenery that surrounded us we began the descent, my companions botanizing, while I watched closely for birds.

On the very summit—or at least less than a hundred feet below it—Snowbirds (*Junco hiemalis*) were twittering among the rocks, but no other species were observed until near the end of the third mile, when the clear notes of a White-throated Sparrow rose from a thicket of dwarf birches (*Betula glandulosa*) and blueberry bushes (*Vaccinium cæspitosum*) by the roadside. A few hundred yards further down we heard a Nashville Warbler singing in a sheltered hollow among some black spruces (*Abies nigra*), the tallest of which were barely four feet high. His presence in such a spot was a forcible illustration of the law that Nature fills all her waste places, for surely he might have found a more congenial home among his kindred in the forests below.

Down to this point we had seen no trace of Thrushes of any kind, and indeed the evergreens were nowhere numerous or high enough to afford them suitable shelter. But about a third of a mile above the Half-way House, or nearly four miles, by the carriage-road, from the summit, and at an elevation of (approximately) 4000 feet, we came to a tract of firs (*Abies balsamifera*) and spruces (*A. nigra*) that seemed to promise better results. This thicket covered three or four acres of a comparatively level portion of the mountain, and extended down the face of an almost sheer precipice to the bed of West Branch in the "Gulf of Mexico" below. Over the level area the trees attained a height of about ten feet. They averaged perhaps four inches in diameter at their bases and their tops were matted and spreading. The ground beneath was moderately open, entirely free from undergrowth, and deeply carpeted with a yellowish-olive moss over which were thickly sprinkled the clover-like leaves of the wood sorrel (*Oxalis acetosella*) and, more sparingly, graceful star flowers (*Trientalis americana*) and beautiful Clintonias (*Clintonia borealis*), the latter still bearing their greenish-yellow blossoms. In the immediate vicinity, but not actually under the shade of the trees, we found *Pyrus americana*, *Betula papyracea* (four or five feet high), *Amelanchier canadensis oligocarpa* (three or four feet in height), *Ledum latifolium*, *Cornus cana-*

*densis*, *Vaccinium vitis-idaea*, *Salix cutleri*, *Arenaria grœnlandica*, *Solidago virga-aurea alpina* (with flowers on the point of opening), and *Smilacina bifolia*.

Around the outskirts of this Alpine wood the trees were shrubby and often so densely matted that it was impossible to penetrate them, but in the interior one could walk with comparatively little difficulty. As I picked my way between the stems, carefully avoiding the many dangerous holes and crevices concealed beneath the mossy floor, I was forcibly reminded of similar forests on the bleak shores of Labrador. The few sunbeams that penetrated among the branches had a pale, wintry cast, and at intervals the rising wind sighed drearily in the trees. Altogether there was about the place an air of rugged—almost savage wildness, in fit keeping with the grandeur of the surrounding scenery.

In this shaggy forest Thrushes were singing and calling on every side, and in the course of an hour or two I managed to secure three specimens, one of which was a typical Olive-back, while the other two, to my great delight, proved to be the birds of which we were in search; *viz.*, representatives of the small southern race of *T. aliciae* lately named by Mr. Ridgway in honor of its discoverer, Mr. Bicknell, and until now known only from Riverdale on the Hudson and the Catskill Mountains of New York.

Although the specimens just mentioned were the only ones actually taken, we saw and heard many others, both at the point already described, and further down the mountain, in the vicinity of the Half-way House. Nor were opportunities wanting for comparing the voice and habits of the new bird with those of its near relative *T. swainsoni*, both being frequently found together in the same thicket, although the Bicknell's Thrushes were the more numerous throughout the region of stunted spruces, while the Olive-backs predominated in the heavy timber below.

The song of Bicknell's Thrush is exceedingly like that of Swainson's; indeed, to my ear, the usual strain, though rather feebler, was nearly indistinguishable; but occasionally—perhaps on the average once in the course of five or six repetitions—a peculiar, and apparently perfectly characteristic bar was interpolated. This was a flute-like *per-pseùeo-pseùeo* given quickly and in a tone which, at a little distance, closely resem-

bled that of the Solitary Vireo's well-known voice. The respective call-notes of the two birds, however, were radically different. That of *T. swainsoni* is a musical *pip* or *peenk* as liquid in tone as the sound of dropping water. The call of *bicknelli*, on the contrary, was harsh and far from pleasing. Usually it was a single loud, penetrating *queep*, often abbreviated to *quee*, and occasionally varied to *quedah* with a falling inflection. At a distance this note sounded not unlike the cry of a Nighthawk. Near at hand it had a peculiarly startling effect in the silence of these solitary woods, and I noticed that it left a disagreeable, jarring sensation on the ear. Once or twice it recalled the *phew* of the Tawny Thrush, but ordinarily it was sharper and higher pitched.

In a general way the habits and actions of these Thrushes may be said to be identical, but *bicknelli* is a much shyer, noisier and more restless bird than its cousin the Olive-back. Indeed I found it next to impossible to creep within shot of one, for long before I was near enough the wary bird would take flight, to resume its singing or calling at some distant and perhaps inaccessible point on the steep mountain side below. The only successful method of proceeding proved to be that of lying in wait near the spot whence one had been driven, for in a short time it was almost sure to return, prompted, apparently, by curiosity, which I found I could stimulate by making a shrill chirping or squeaking. On such occasions the bird would approach by short, cautious flights, keeping itself so well concealed that it would often come within a few yards and retire again without once exposing itself to view. Indeed the two specimens taken were only secured by snap shots directed almost at random towards some opening in the branches where the flash of a wing betrayed its owner's movements.

Judging from the necessarily imperfect observations made during my hurried reconnoissance, the Bicknell's Thrushes are most abundant, on Mt. Washington, in the belt of stunted firs and spruces which border the upper edge of the heavy timber, at an elevation of about 3800 feet. From this point their numbers rapidly diminished as we descended, and the last one positively identified was met with at an elevation of (approximately) 3000 feet. Their range upwards is probably co-extensive with that of their favorite spruce thickets, for, as already stated, they were

found at the highest point where shelter of this kind occurred. There is, of course, no reason for supposing that they are confined to the eastern side of Mt. Washington. On the contrary it is highly probable that they are generally distributed over the upper portions of that mountain as well as on many of the higher ones of the surrounding group. Indeed they may be confidently looked for almost anywhere in New England at an elevation of over 3500 feet.

Through Mr. Bicknell's kindness I am now able to make a direct comparison between the specimens obtained on Mt. Washington and two of the Catskills examples, one of which (No. 653) figures prominently in Mr. Ridgway's original description of the new race.

My measurements of these four specimens are as follows :

653 (E. P. Bicknell) ♂ ad., Slide Mt., New York, June 15, 1881. Wing, 3.65; tail, 2.96; culmen from feathers, .50; from base, .68; depth of bill at nostrils, .16.

717 (E. P. B.) ♂ ad., Slide Mt., June 27, 1882. Wing, 3.60; tail, 2.73; culmen from feathers, .54; from base, .67; depth of bill at nostrils, .18.

7389 (W. B.) ♂ ad., Mt. Washington, July 20, 1882. • Wing, 3.74; tail, 2.93; culmen from feathers, .49; from base, .64; depth of bill at nostril, .15.

7390 (W. B.) ♂ ad., same locality and date. Wing, 3.60; tail, 2.79; culmen from feathers, .52; from base, .67; depth of bill at base, .16.

The Mt. Washington birds are in worn breeding plumage. They are plain grayish-olive above and along the flanks, with a slight tinge of reddish on the tail, and more or less fulvous over the jugulum and throat. Their general coloring is identical with that of average spring specimens of *T. aliciae* and very much grayer than in Mr. Bicknell's No. 653, which, however, is probably an exceptional specimen, for his No. 717, obtained in the same locality June 27, 1882, is but a trifle browner than the New Hampshire skins. The latter come well within the limits of size given for *bicknelli*, and their bills are fully as slender and depressed as in Mr. Bicknell's most extreme specimen (No. 653). This peculiar shape of the bill, already remarked upon by Mr. Ridgway, is a striking point of difference between them and all of a large series of Gray-cheeked Thrushes which I have collected in New England during the migrations. But although seemingly confined to the smaller race, it is an inconstant character, for Mr. Bicknell's No. 717 has a bill as stout as in many of my largest *aliciae*. Taking size as the sole test (and it is the only one posi-



tively claimed by Mr. Ridgway) I find that of Massachusetts specimens captured during the migrations, my series includes five that fall within the extremes assigned to *bicknelli*, to which, necessarily, they, with the Mt. Washington examples, must now be referred.

While it is perhaps unsafe to base any very positive conclusions on the material at present available, there seems every reason to believe that this small race will prove a reasonably constant one, at least as represented along the southern borders of its breeding range. However this may be, the long-disputed question of the character of the relationship borne by *T. aliciae* to *T. swainsoni*, is, as Mr. Bicknell has pointed out, at length definitely settled. Those who from the first have maintained their specific distinctness have surely good reason to exult in this final victory.

Our satisfaction at the acquisition of this Thrush, new specifically to the summer fauna of New England, and, as a variety, previously unrecognized from within its limits, can scarcely fail to be tempered with chagrin that so interesting a stranger has all this time existed among us undetected. Yet when we pause to reflect, there is the consolation—barren though it be—that our higher mountains have never been adequately explored by ornithologists; and who can say that they do not hold further surprises? With their Alpine flora and cold climate they offer conditions favorable to the requirements of many northern-breeding birds, and it is by no means improbable that several such, at present known only as migrants through New England territory, may eventually be found to pass the summer in their remote fastnesses. At all events the field is well worth further investigation.

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## NOTES ON AN HERMAPHRODITE BIRD.

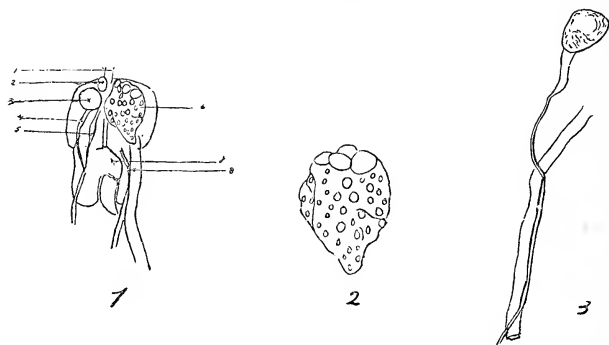
BY J. AMORY JEFFRIES.

A short time ago I received the body of a Green-tailed Towhee (*Pipilo chlorurus*), which forms the subject of the following description. The bird was shot by Mr. Brewster, at Colorado

Springs, on May 16, 1882. In plumage it resembled females of the species, but on dissection to determine the sex, both an ovary and a testicle were found; the one on the left the other on the right side. After examination by Mr. Brewster and Mr. J. A. Allen, the body was placed in water to prevent its drying, no alcohol being at the time procurable. Two days later the body was transferred to a small quantity of alcohol, in which it remained until presented to me.

When opened to determine the sex the body was cut on one side and the cloaca cut off from the rectum and the ducts, besides more or less injury being done to the mesenteries. Below follows a description of the anomalous organs, the kidneys, female and male structures.

The kidneys, of the usual structure found among the Sparrows, were perfectly normal in their anterior halves; the posterior halves, however, were anomalous. The left kidney was much diminished in width at the expense of the inner portion; the right kidney, on the contrary, was much wider than usual and extended



across the vertebral column and apparently — the specimen was somewhat broken — joined the left kidney by an isthmus.\* From the posterior border of the isthmus depended a lobe in front and to the left of the vertebral column. Accordingly while the aorta (1, Fig. 1) and the pelvis (5) of the kidneys are to be seen in the anterior parts, these structures are posteriorly covered to a considerable degree. The substance of the kidneys was perfectly normal and with a smooth surface. The ureters were normal in every respect.

\*This condition is sometimes found in man, where it is known as the horse-shoe kidney.

The supra-renal bodies (2, Fig. 1) were of fair size for an adult bird, and were wedged in between the heads of the kidneys and the aorta.

The ovary (6, Fig. 1 and Fig. 2) was entirely normal in position and appearance, and presented the usual resemblance to a bunch of grapes. It measured about .35 by .24 of an inch, the ova varying from .07 of an inch down. In all there were about forty ova easily visible to the eye. These, as shown by the microscope, were perfectly normal, and were fully as large as the ova of females of the species shot at the same time. The ovary was hung from the body, directly below the head of the left kidney, by the usual peritoneal foulds, and also separated by a median fould, the mesentery, from the right side.

The oviduct, normal in appearance and position, was but slightly convolute and not dilated. So sexual action had not fully commenced.

No vas deferens was to be found on the left side.

The testicle (3, Fig. 1 and Fig. 3), much shrunk on account of its maceration and sudden plunge into alcohol, was the least preserved part of the whole body. It was in its usual position on the right side, and was perfectly distinct from either the kidney or suprarenal body. Through the outer tunic a few convolutions could be seen.

The vas deferens extended from the testicle back in front of the right kidney and outside the pelves to the middle part of the right ureter. Here it crossed and became internal, but recrossed and again became external before reaching the cloaca. Near the kidney it was good sized, but shortly tapered down to a thread in very close connection with the wall of the ureter. The vas deferens was perfectly normal in structure for a bird before rut, but abnormal in relation to the right ureter.

There was no trace of an oviduct on the right side.

Since almost all the cases of reported lateral hermaphroditism have been, at one time or another, explained away as abnormal growths, or remains of the Wolffian bodies, I deemed it best to subject the testicle to a microscopic examination. The tunica albuginea, though by no means thick, was quite strong and composed of connective tissue. From its inner surface hung a few small threads, probably vessels and trabeculæ. The tunic was pierced at the vertebral surface by the vas deferens, vessels and

nerves. The substance of the testicle had evidently undergone considerable loss and by no means filled up the tunica albuginea.

When picked to pieces the substance of the gland was found to consist of rather small coiled tubes—the tubuli seminiferi,—blood-vessels and nerves. The tubes were naturally much decayed and went to pieces at the slightest touch. They stained but poorly with any reagent. The tubules were carefully examined with a high power for spermatozoa. No satisfactory evidence of their existence could be discovered, though two or three bodies which may have been developing spermatozoa were found. The histology of the tubules themselves seemed perfectly normal.

The blood-vessels, which entered with the vas deferens, branched and split up into capillaries which extended out to the surface of the organ.

In closing the description I would say that great care was taken to guard against all possible mistakes of identification, caused by diseased growth, remains of embryonic structures, or malformations, also that the testicle did not present the slightest resemblance to a modified *right* ovary; the true nature of the gland was undoubted.

There can therefore be no doubt but that the specimen is a perfect example of lateral hermaphroditism, the left side being like that of a normal female, and the right very much like that of a normal male, the abnormal condition of the kidney very likely explaining the slight change in relations of the genital and urinary ducts. That no spermatozoa were found does not prove the testicle to have been functionless, since the period of rut had not commenced. This of course assuming that no spermatozoa were found—a point I cannot positively assert—and that spermatozoa would have been found had they existed in the gland. Considering the decayed state of the gland, I doubt if the latter condition would hold good.

Similar cases are very rare and but three have, so far as I know, been reported for birds, while Quain's Anatomy\* in referring to man, reads as follows: "Extremely rare forms referable to the possible coexistence of the productive parts of testicle and ovaries in the same individual, usually combined with more or less of the foregoing kinds of malformation." This

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\* Quain's Anatomy, Eighth Edition, Vol. II, p. 825.

statement is thus worded on account of the doubt connected with many of the descriptions. There are, however, three cases reported as occurring in hens which are comparable. The first case, that reported by Bechstein,\* was a chicken with a testicle on the right side and an ovary on the left, that is much like the *Pipilo*. The two cases reported by Simpson † were less perfect. One was simply a female bird with a half developed vas deferens on the right side, the other had a vas deferens on each side. In both cases there were slight mixtures in the habits and plumage of the two sexes.

In the *Pipilo* each side was perfect after its sex and showed no resemblance to the other sex, thus separating it from the second example given by Simpson. The natural explanation is that the two generative mounds took on the two sexes and that the accessory structures followed the master organs. So the Wolffian duct remained on one side and the Mullerian on the other.

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## ON A COLLECTION OF BIRDS LATELY MADE BY MR. F. STEPHENS IN ARIZONA.

BY WILLIAM BREWSTER.

(Concluded from Vol. VII, p. 212.)

122. ***Antrostomus nuttalli* (Aud.) Cass.** NUTTALL'S WHIP-POOR-WILL.—Although these Whip-poor-wills were common in many of the localities visited but few specimens were taken, a fact largely owing to their nocturnal habits. They were oftenest heard in rocky places, especially among foot-hills. One killed near Tombstone, on the evening of April 8, frequently alighted on the ground to pick up beetles.

123. ***Chordeiles acutipennis texensis* (Lawr.) Ridgw.** TEXAN NIGHTHAWK.—Represented in the collection by nine specimens from the following localities: Santa Rita Mountains,

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\* Naturgeschichte der Voegel, Bd. II, p. 1219.

† Article, Hermaphroditism, Todd's Ency. of Anatomy and Physiology.

(♂ and ♀, May 16); Tucson (♂ and ♀, June 8); Camp Lowell (♀ June 21, three ♂ and one ♀ June 22).

124. **Picus villosus harrisi** (Aud.) Allen. HARRIS'S WOODPECKER.

40, ♂ ad., Chiricahua Mountains. March 14. Length, 9.10; extent, 15.60; wing, 4.93. "Iris brown. Common here among pines."

125. **Picus scalaris** Wagl. TEXAN SAPSUCKER.—Common. A nest containing four eggs was found April 19, at Tucson.

A male taken April 15, at Cienega Station, differs from the other Arizona specimens as follows: The red of the head is restricted to a stripe above and behind the eye and to a broad band on the occiput, the entire forehead and crown being black finely spotted with white. In these respects it agrees with descriptions of var. *lucasanus*, but the tail-markings are as in *scalaris* proper. A female in first plumage (No. 441, Tucson, May 26) has the crown dull red, the occiput black, the plumage beneath thickly spotted, and the dorsal bars dull and ill-defined.

126. **Picus stricklandi** Malh. STRICKLAND'S WOODPECKER.—The explorations of the past season developed little of importance regarding this Woodpecker, save the fact of its occurrence among the Santa Rita Mountains, where Mr. Stephens found it nearly as abundant as in the Chiricahua range. His efforts to obtain its eggs were unsuccessful, but a nest containing young was discovered May 16. "The shell of the tree (a sycamore) was very hard, and as I had only a pocket knife to cut with, I did not attempt to open the hole. The voices of the young sounded as if they might be about two weeks old." The above date would indicate that this Woodpecker is a rather early breeder, an inference which is further sustained by the fact that a female, taken April 1, "would have laid in two or three weeks."

The fourteen specimens collected show a remarkable amount of variation in respect to the spotting of the under parts. In some examples the markings are small, tear-shaped, and confined chiefly to the sides and a scarcely continuous band across the breast, the median line of the body being nearly immaculate, and the throat absolutely so. In others the feathers of the throat (but not of the chin) have fine brown shaft-streaks, and the remainder of the under plumage is so thickly and coarsely spotted that its light ground-color is often nearly obliterated. Between these extremes are many intermediate styles, scarcely any two birds being exactly alike. The increase in the size and number of spots is usually correlated with a decrease in the amount of white on the tail. Normally the outer feathers have three white spaces continuous across both webs; the second pair two. But with heavily-spotted birds the white on the second feather is sometimes confined to a single pair of sub-terminal spots

(which are not confluent at the shaft) and one or two shallow scallops on the outer web; while the exterior feathers have the white much restricted (but never interrupted except near their bases) by the increased width of the black bars.

A male and female from the Santa Rita Mountains are curiously tinged with reddish-brown. In the male this color is very generally distributed both above and beneath, while on the interscapulars and some of the primaries it deepens to reddish-chestnut. Possibly it is a stain caused by contact with bark or decaying wood, but the whole plumage is so evenly dyed that this explanation is hardly satisfactory. The female of this pair is also peculiar in possessing a continuous but partially concealed *nuchal band* of brownish-orange, which, on the sides of the neck, is fully exposed, but behind can be seen only upon raising or otherwise disarranging the feathers. Both specimens seem to be adult birds.

23, ♀ ad., Cave Creek, March 7. Length, 8.10; extent, 14; wing, 4.55; tail, 3.25; culmen, .98.

42, ♂ ad., Morse's Mill, March 14. Length, 8.10; extent, 14.30; wing, 4.61; tail, 3.31; culmen, 1.16.

43, ♀ ad., same locality and date. Length, 7.90; extent, 14.20; wing, 4.45; tail, 3.03; culmen, .96.

117, ♀ ad., Morse's Mill, March 27. Length, 8.10; extent, 14.40; wing, 4.46; tail, 3.38; culmen, 1.05.

129, ♂ ad., Morse's Mill, March 30. Length, 8.40; extent, 14.20; wing, 4.53; tail, 3.20; culmen, 1.22.

143, ♀ ad., Morse's Mill, April 1. Length, 7.70; extent, 14.

144, ♀ ad., same locality and date. Length, 8.20; extent, 14.40; wing, 4.55; tail, 3.27; culmen, 1.05.

156, ♂ ad., Morse's Mill, April 2. Length, 7.80; extent, 14.30; wing, 4.44; tail, 2.92; culmen, 1.15.

358, ♀ ad., Santa Rita Mountains, May 12. Length, 7.40; extent, 14.20; wing, 4.37; tail, 2.90; culmen, 1.03.

379, ♂ ad., Santa Rita Mountains, May 14. Length, 8.60; extent, 14.70; wing, 4.45; tail, 3.23; culmen, 1.25.

398, ♀ ad., Santa Rita Mountains, May 17. Length, 7.80; extent, 14; wing, 4.32; tail, 3.05; culmen, .99.

399, ♀ ad., same locality and date. Length, 7.90; extent, 14.10; wing, 4.40; tail, 3.18; culmen, 1.06.

127. **Sphyrapicus varius nuchalis** Baird. RED-NAPED WOODPECKER.—Met with during March, in the Chiricahua Mountains. It was found among scrubby pines and was not common. The stomachs of the specimens dissected contained small black ants.

128. **Sphyrapicus thyroideus** (Cass.) Baird. WILLIAMSON'S WOODPECKER.—Two specimens, both females, were taken early in March in the Chiricahua Mountains. One of these birds

had "innumerable eggs of some parasite between the muscle and skin on the upper side of the wings."

129. **Centurus uropygialis** *Baird*. GILA WOODPECKER.— One of the four specimens obtained during the past season is accompanied by the following notes. "Nine miles east of Tombstone, April 8. This point is the furthest east that I have seen this Woodpecker. I did not find it on the upper Gila. The present specimen was among oaks and walnuts which were sparingly distributed along an arroya. They usually frequent mesquites or giant cactuses, but the latter are wanting here and the mesquite is only a low shrub." The remaining three skins were taken June 1 and 2, at Camp Lowell.

*Juv., first plumage.* ♀ (No. 477, Camp Lowell, June 2). Crown with faint transverse vermiculations of dull brown. The white of the back and wings tinged with smoky-brown. Abdomen reddish-saffron. Otherwise like adult of the same sex.

130. **Melanerpes formicivorus bairdi** *Ridgw.* CALIFORNIAN WOODPECKER.— Found only among the Chiricahua Mountains where a few specimens were taken about the middle of March. "In Arizona and New Mexico I have never seen acorns buried in the bark of trees by this bird, as is its common practice in California. Otherwise there is little difference in their habits in the two regions."

One of the Arizona examples—a female—has nearly the whole of the black pectoral crescent streaked with white, thus showing an approach to certain more southern races.

131. **Colaptes auratus mexicanus** (*Sw.*) *Ridgw.* RED-SHAFTED FLICKER.

115, ♂ ad., Chiricahua Mountains, March 26. Length, 12.90; extent, 20.90. "Iris dark brown. Stomach contained ants. Common here but invariably shy." This specimen has a few red feathers on the nape.

132. **Colaptes chrysoides** (*Malh.*) *Baird*. MALHERBE'S FLICKER.—Mr. Stephens regards the distribution of this species in Arizona as coextensive with that of the giant cactus, for he has never seen it excepting where this singular plant grows. In coming from California by the Mohave route, in 1880, the first cactuses were met with on the Big Sandy River, a tributary of the Bill Williams River, and *C. chrysoides* was there observed for the first time. During the past season the birds were found in moderate numbers both at Tucson and Camp Lowell. Their notes were indistinguishable from those of *C. mexicanus*, and in a general way their habits were much the same. They were



fond of sitting on the tops of the cactuses, whence they could command an uninterrupted view of the surroundings. Several nests were found, but as all were in thorny cactus trunks the eggs were inaccessible. A female shot April 20, as she flew from her nesting-hole, proved on dissection to be laying.

*Juv., first plumage.* ♂ (No. 475, Camp Lowell, June 2). Differing from the adult in having the forehead, and crown anteriorly, washed with claret-red; the back and wings ashy-brown in strong contrast with the rufous-brown of the head; the primaries broadly tipped with brownish-white; the under parts darker with finer spotting; and the black pectoral crescent reduced in size and restricted to the middle of the breast.

*Juv.,* ♀ (No. 476, Camp Lowell, June 2). Similar to the young ♂, but lacking the red moustache and the claret wash on the forehead and crown.

One of the adults before me (No. 243. ♀, Tucson, April 20), differs from the typical condition in having the yellow of the wings and tail replaced by orange, while the shafts of many of the feathers show an even stronger reddish cast, those of the rectrices at their bases being especially deep in color. The crown, also, is darker than in my other specimens. This departure from the normal coloring undeniably narrows the gap which separates *chrysoïdes* from *mexicanus*, but it may be merely a chance reversion, or what is perhaps still more likely, the specimen in question may be a hybrid.

243, ♀ ad., Tucson, April 20. Length, 11.60; extent, 18.70; wing, 5.55; tail, 3.95; culmen, 1.76. "Iris brown; bill black; legs greenish. Stomach contained insects and small seeds."

459, ♀ ad., Camp Lowell, May 31. Length, 11.20; extent, 18.60; wing, 5.65; tail, 4.08; culmen, 1.67.

469, ♂ ad., Camp Lowell, June 1. Length, 11.70; extent, 18.80; wing, 5.70; tail, 4.28; culmen, 1.63.

475, ♂ juv., first plumage, Camp Lowell, June 2. Barely able to fly.

476, ♀ juv., first plumage, same locality, date, and remarks.

594, ♂ ad., Camp Lowell, June 25. Length, 11.40; extent, 18.40.

133. **Ceryle alcyon** (Linn.) Boie. BELTED KINGFISHER.

321, ♀ ad., Tucson, May 3. Length, 13.60; extent, 22.40; wing, 6.35; tail, 4.12; culmen, 2.44. "Iris dark brown; bill black, pale at base below; legs dark. Several frequent the river here."

134. **Geococcyx californianus** (Less.) Baird. CHAPARRAL COCK.—"I have not found them common either in Arizona or New Mexico, but they are abundant in Southern California, and I have seen three or four in Colorado. They run rapidly, putting a horse to pretty good speed to overtake them. If pursued by a dog they will often take to a small tree, and on such occasions they can be closely approached. They can increase their speed when running by the use of their wings, and they

can also rise into a tree by taking a running start and then sailing on spread wings. They do not attempt any real flight, however. Their food includes lizards, snakes, grasshoppers, beetles, etc."

456. ♂ ad., Camp Lowell, May 31. Length, 23.10; extent, 21.50. "Iris dark brown with a narrow light-yellow ring next the pupil; bill dull brownish-black; feet pale bluish; scutella of tarsi dull yellowish; bare space on sides of head, dull blue about the eye, whitish for a small space behind the eye, and still farther back, red with a yellowish tinge."

135. **Coccygus americanus** (Linn.) Bonap. YELLOW-BILLED CUCKOO.

512. ♂ ad., Tucson, June 8. Length, 12.60; extent, 17; wing, 6; tail, 6.57; culmen, 1.13. "Iris brown; legs dark greenish-brown; bare orbital space much the color of the surrounding feathers. This is the first specimen that I have seen in Arizona."

527. ♂ ad., Tucson, June 12. Length, 12.30; extent, 16.70; wing, 5.94; tail, 6.47; culmen, 1.13. "Two others seen to-day."

136. **Scops asio trichopsis?** (Wagl.) Brewster. MEXICAN SCREECH OWL.

The specimens catalogued below are unmistakably referable to the so-called *trichopsis*\* of our South-western border, a form which, as I have lately stated, grades into *asio* through the California race *bendirii*. There is a doubt, however, as to whether Mr. Ridgway's *trichopsis* is really the *trichopsis* of Wagler, and this question, I believe, still remains unsettled. Mr. Henshaw's Arizona specimens were referred to *macalli*, but as that race is now restricted, within the United States, to the Valley of the Lower Rio Grande, in Texas, they probably belong here.

488. ♀ ad., Camp Lowell, June 3. Length, 8; extent, 21.20; wing, 5.52; tail, 3.20. "Iris yellow; bill black, paler at tip; toes pale. Parent of the next."

489. ♀ juv., first plumage, same locality and date. "Shot by moonlight among low mesquites. Call-note a kind of *chuck*, different from anything that I have previously heard. There were others, probably the remainder of the brood, but after I had shot the parent they remained silent.

137. **Bubo virginianus subarcticus** (Hoy) Ridgw. WESTERN HORNED OWL.—The female of the pair mentioned below was shot as she flew from her nest, which was built in a mesquite at a height of about fifteen feet. It contained a recently hatched bird and one addled egg. The latter measures 2.15×1.75.

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\*See this Bulletin, Vol. VII, p. 32.

347, ♀ ad., Tucson, May 7. Length, 20.80; extent, 53.20; wing, 14.50; tail, 8.50. "Iris yellow; bill and claws black. The stomach contained beetles, portions of craw-fish and a few fish scales."

561, ♂ ad., Camp Lowell, June 21. Length, 19.20; extent, 49.20; wing, 13.12; tail, 8.

138. **Glaucidium gnoma** *Wagl.* CALIFORNIA PYGMY OWL.—The single specimen obtained by Mr. Stephens differs from my California examples in absolutely lacking any tinge of umber or reddish-brown both above and below, the ground color of the upper parts being dark brownish-plumbeous, and the longitudinal streaks beneath nearly black. This condition, doubtless, is merely an extreme one of the bird's recognized "plumbeous" phase.

89, ♂ ad., Chiricahua Mountains (10,000 feet) March 24. Length, 6.50; extent, 13; wing, 3.50; tail, 2.90. "Iris yellow. This bird was sitting on the extreme top of a dead pine. I heard another but failed to find it. The note was repeated a number of times at intervals of about once a second. I saw a flock of four near Fort Bayard, New Mexico, in 1876."

139. **Glaucidium ferrugineum** (*Maxim.*) *Kaup.* FER-  
RUGINEOUS PYGMY OWL.

482, ♂ ad., Camp Lowell, June 3. Length, 7; extent, 13.40; wing, 3.60; tail, 2.90. "Iris yellow, bill greenish-yellow; cere yellowish-green; toes dull greenish-yellow; claws black. In some cottonwoods near camp I heard this individual—or another of the same species—for several consecutive mornings. His note was a loud *cuck* repeated several times as rapidly as twice each second. At each utterance the bird jerked his tail and threw back his head. Occasionally a low *chuck*, audible for only a short distance, replaced the usual call."

140. **Micrathene whitneyi** (*Cooper*) *Coues.* WHITNEY'S PYGMY OWL.—In 1872 Capt. Bendire secured several specimens of this pretty little Owl near Tucson, but no one seems to have since met with it in Arizona, and up to the present time it has remained a rare and little-known species. This, doubtless, has been chiefly owing to the fact that the Territory has been only superficially explored, for Mr. Stephens found it a very common bird in the desert region about Tucson and Camp Lowell. His first specimen was obtained in the following manner. Happening one day to cut down the trunk of a giant cactus for the purpose of investigating a Woodpecker's hole, he found a Whitney's Owl within, dead, but apparently only just killed by the fall. The hint was at once acted on with results disastrous to both Owls and cactuses, for an extensive raid on the latter, continued during several weeks in different localities, yielded a goodly num-

ber of the coveted birds. Those taken from holes were all females, but some males were afterwards shot in elder and willow thickets. The notes accompanying two specimens obtained June 3 at Camp Lowell are so interesting that I transcribe them in full. "I was walking past an elder bush in a thicket when a small bird started out. Thinking it had flown from its nest I stopped and began examining the bush, when I discovered a Whitney's Owl sitting on a branch with its side towards me and one wing held up, shield-fashion, before its face. I could just see its eyes over the wing, and had it kept them shut I might have overlooked it, as they first attracted my attention. It had drawn itself into the smallest possible compass so that its head formed the widest part of its outline. I moved around a little to get a better chance to shoot, as the brush was very thick, but whichever way I went the wing was always interposed, and when I retreated far enough for a fair shot I could not tell the bird from the surrounding bunches of leaves. At length, losing patience, I fired at random and it fell. Upon going to pick it up I was surprised to find another, which I had not seen before, but which must have been struck by a stray shot." Rather curiously both of these specimens proved to be adult males. It is by no means certain, however, that the males are not to a certain extent gregarious during the breeding season, for on another occasion two more were killed from a flock of five which were sitting together in a thick bush.

Judging from the notes at hand these little Owls are strictly nocturnal in their habits. With the evening twilight they came forth from their retreats and were sometimes dimly seen, but oftener heard calling to one another. They had several different notes, one of which sounded like the syllable "*churp*"; while another was a low "*tw-jur rrr*." These cries were heard at all times of the night, but oftenest in the early evening and again at daybreak.

During Mr. Stephens's raid on the cactuses several nests were discovered. These were invariably in deserted Woodpeckers' holes and usually at such a height that the trunk had to be felled. In every case this resulted in the breaking of the eggs, but one of the accessible nests fortunately contained a sound specimen. This egg is broadly ovate in shape, and measures 1.07X.91. The shell, which is clear white, is slightly rough-

ened by numerous pores. but it nevertheless has a decided polish. Fresh eggs were found from May 10 to June 27, dates which indicate that the species breeds rather late in the season.

*Juv., first plumage*, ♀ (No. 608, Camp Lowell, June 28). Above plumbeous-ashy, the forehead spotted with pale rufous, the back indistinctly barred with reddish-brown; wings and tail marked as in the adult, but with rusty-brown instead of pale rufous; beneath ashy-white, barred everywhere—but most heavily on the breast—with ashy-brown; throat tinged with rufous. Another specimen, which is apparently a little older, has the back sparingly marked with rusty.

Among sixteen adult birds I find remarkably little individual variation. Some specimens, however, are rather more coarsely spotted above than others, and the color of the longitudinal streaks beneath varies, in the different examples, from ashy-brown slightly tinged with rufous to a decided rusty-chestnut. There is apparently no sexual difference, even in respect to size. The extremes are as follows:

Largest ♂, length, 6; extent, 15.10; wing, 4.33; tail, 2.26.

Smallest ♂, length, 5.60; extent, 14.60; wing, 4.20; tail, 2.19.

Largest ♀, length, 5.90; extent, 15.20; wing, 4.27; tail, 2.16.

Smallest ♀, length, 5.60; extent, 14.90; wing, 4.23; tail, 2.11.

141. **Falco sparverius** Linn. SPARROW HAWK. — The Sparrow Hawk was a common and generally distributed species in all the regions traversed. I have already, in another connection,\* mentioned the finding of its feathers in a cave near Gayleville.

“Iris dark brown; bill bluish, blackening at tip; legs light yellow.”

142. **Polyborus cheriway** (Jacq.) Caban. CARACARA EAGLE. — Heermann is accredited with having found this species “abundant” on the Rio Gila and Colorado near Fort Yuma, but I cannot learn that it has ever been detected elsewhere in Arizona. Its presence at Tucson, as attested by the following specimen, is therefore of some interest.

348, ♂ im., Tucson, May 9. “Iris brown; bill pale green at base, becoming nearly white at tip; bare portions of the head dull purplish-red, whitish under the eyes; legs white with a yellowish tinge. This individual was in company with Turkey Buzzards and Ravens at a slaughter-house; It was wilder than the other birds, being the first to fly when I approached the spot. I was told of another individual which sometimes accompanied it.”

143. **Pandion haliaëtus carolinensis** (Gm.) Ridgw. FISH HAWK. — The only mention of this species which I find among the present notes, is an incidental reference to an individual seen near Tucson on April 23.

\* This Bulletin, Vol. VII, p. 211.

144. **Accipiter cooperi Bonap.** COOPER'S HAWK.—This Hawk was occasionally seen during Mr. Stephens's visit to the Santa Rita Mountains. On May 18 a nest was found in the fork of a green oak at a height of about thirty feet. It had apparently been used several seasons. The eggs, which were slightly incubated, measure respectively  $1.92 \times 1.41$ ;  $1.93 \times 1.42$ ;  $1.91 \times 1.40$ ;  $1.92 \times 1.40$ . The parent birds were exceedingly shy, but one of them was finally killed with a rifle-ball.

406. ♂ ad., Santa Rita Mountains, May 18. Length, 16.70; extent, 30; wing, 9.38; tail, 8.44. "Iris brownish-red; cere, greenish-blue; legs, greenish-yellow. Taken with set of four eggs."

This specimen is absolutely indistinguishable from some of my Massachusetts examples.

145. **Buteo abbreviatus Caban.** ZONE-TAILED HAWK.—This fine Buteo was met with only at Tucson, where three specimens were taken. Of the first Mr. Stephens writes: "I was standing on a dam that crossed the river at the head of an irrigating ditch, when below me a Vulture, as at the time I supposed it to be, attempted to catch some minnows in a shallow place, fluttering over the water and trying to snatch up the little fish with its feet. Failing in this it alighted on the dam near me when I fired and killed it." This occurred in April. Later in the season (June 7) a fine adult pair was obtained near the same place but under somewhat different conditions. "I was looking for nests among the mesquites when the male of this pair came circling over me. Upon shooting him the female appeared, and I succeeded in getting her also. Feeling sure that they had a nest, I began to search the surrounding trees and soon discovered it,\* well hidden by bunches of mistletoe."

Dr. Coues took a Zone-tailed Hawk on the Gila River, Sept. 24, 1864, and this, so far as I know, is the only identified Arizona specimen which has been previously announced. I cannot help thinking, however, that the bird which Capt. Bendire found breeding in Arizona in 1872 really belonged to this species, as he at first supposed, and not to *Urubitinga anthracina*, as afterwards surmised by Mr. Henshaw. Nor is it improbable that the black Hawks seen by the latter gentleman near Camp Bowie were also referable here.

311. ♂ im.. Tucson, April 30. Length, 18.70; extent, 49.50; wing, 15; tail, 8.75; culmen (chord from cere), .88. "Iris brown; bill black, green-

\* The notes do not state what this nest contained.

ish at base both above and below; cere, legs, and feet, yellow; claws black. The stomach contained two lizards, a few fish scales and some feathers. Sexual organs very minute." This specimen is in nearly the same plumage as the one described by Mr. Ridgway in "History of North American Birds" (Vol. III, p. 273).

501, ♂ ad., Tucson, June 7. Length, 19.20; extent, 48.40; wing, 15.60, tail, 9.15; culmen (chord from cere), .73.

502, ♀ ad., same locality and date. Length, 21.20; extent, 53.10; wing, 16.88; tail, 10; culmen (chord from cere), 1.

146. **Asturina nitida plagata** (Licht.) Ridgw. MEXICAN GOSHAWK. — "A common species in some of the mesquite groves about Tucson. Flight Falcon-like and very swift. The cry is a loud 'crur' repeated four or five times in succession. At a distance it sounds much like the scream of a Peacock."

The stomachs of the specimens examined contained lizards, small squirrels, fish scales, the wing-covers of beetles, and unrecognizable fur and bones of small rodents. A nest found May 2, was placed in the fork of a cottonwood about forty feet above the ground. It was composed outwardly of cottonwood twigs and was lined with leaves. The single egg which it contained is white with a faint bluish tinge. It is ovate in shape and measures 2.04 × 1.65.

Among the adults collected by Mr. Stephens I find little variation in either color or markings, and the sexes differ only in size. A male killed early in May represents the now well-known immature condition which curiously resembles that of the Broad-winged Hawk.

244, ♀ ad., Tucson, April 20. Length, 17.90; extent, 37.20; wing, 11.12; tail, 8. "Iris dark brown; bill and claws, black; cere, legs, and feet, bright yellow. Laying, but had not completed her set."

250, ♀ ad., Tucson, April 21. Length, 17.70; extent, 34.90; wing, 11.34; tail, 8.

302, ♂ ad., Tucson, April 28. Length, 16.30; extent, 32.10; wing, 10.38; tail, 7.50.

305, ♂ ad., Tucson, April 29. Length, 16.20; extent, 33.10; wing, 10.18; tail, 7.12.

323, ♂ ad., Tucson, May 3. Length, 16.30; extent, 33.90; wing, 10.50; tail, 7.88.

330, ♂ im., Tucson, May 4. Length, 16.50; extent, 33.40; wing, 9.95; tail, 7.94. "Iris brown; bill and claws, bluish-black; cere, rictus, legs and feet, yellow."

147. **Cathartes aura** (Linn.) Illig. TURKEY BUZZARD. — Incidentally mentioned in the notes as being common near Tucson. A large Vulture seen at Cave Creek, March 7, was thought by Mr. Stephens to be *Pseudogryphus californianus*.

148. **Zenaidura carolinensis** (Linn.) Bp. CAROLINA DOVE.—An abundant species throughout most of the regions traversed.

149. **Melopelia leucoptera** (Linn.) Bp. WHITE-WINGED DOVE.—This Dove was not uncommon about Tucson, where specimens were taken at intervals between April 26 and May 23. They frequented the mesquite tracts and fed largely on mesquite "beans." Their notes were similar to those of the Turtle Dove, but hoarser, and uttered with more apparent effort. They were usually rather shy.

On the journey to California they were occasionally seen in dreary deserts where few other birds seemed able to support life. At Yuma they were actually common, but none were found to the westward of this point. A nest obtained July 8, on the Gila River, was placed in a mesquite on the side of a sand-hill. It contained two eggs, slightly incubated, which measure respectively  $1.30 \times .91$  and  $1.20 \times .92$ . Arizona skins are identical with Texas ones.

"Iris dark orange; bill black; legs dull red; bare orbital space blue."

150. **Chamæpelia passerina** (Linn.) Swains. GROUND DOVE.—Rather common about Tucson, where a number of specimens were obtained.

The Arizona males in my series are much lighter colored than those from Florida, and their bills, instead of being yellow or dull orange, as in eastern birds, are pure Indian red, with the usual dusky tip. These differences appear to be constant, but my material is not sufficiently extensive to enable me to judge of their bearing or importance.\* In some generalizations, based upon the examination of fifty-six examples in the Smithsonian Museum, Mr. Ridgway says:† "As a rule, Florida and West India skins are most deeply colored," but he does not mention any variations in the color of the bill, which is simply described as "yellow."

"Iris pink (No. 300); pinkish-brown (No. 301); bill red, tipped with blackish; feet and legs pale flesh-color."

151. **Lophortyx gambeli** Nutt. GAMBEL'S QUAIL.—Specimens were obtained near Tucson, and others noted at and beyond Walters, a station in the Colorado Desert. The first *Lophortyx californicus* were met with in the San Gorgonio Pass, a day's drive to the westward of where the last Gambel's Partridges were seen.

\*Prof. Baird has described a var. *pallescens* from Cape St. Lucas, to which these specimens are possibly referable. See Proc. Acad. Nat. Scien. Philad., 1859.

†History of North American Birds, Vol. III, p. 390.



152. **Callipepla squamata** (Vig.) Gray. SCALED QUAIL.  
—These Quail were usually met with in the most barren places, often in deserts miles from any water. They were commonly found in flocks of from six to ten, but as many as thirty were occasionally seen together. They were so shy and difficult to obtain that Mr. Stephens rarely got more than one from a flock. He traced them westward to Picacho Station (Southern Pacific Railroad) beyond which point he thinks they do not extend.

Some time since I called attention\* to certain points of difference between Texas and Arizona specimens of the Blue Quail, suggesting the name "*pallida*," for the Arizona representative in the event of its proving distinct. More recent examination of material from various localities has confirmed the stability of these differences, which are certainly sufficient to warrant the recognition of a new race. I find, however, that Vigors described† the pale interior form, which accordingly must stand as *C. squamata*, the Texas bird being the one eligible for a new name.‡ As the two have been more or less generally confused by authors I find it necessary to rearrange their characters as follows:—

**Callipepla squamata** (Vigors) Gray. SCALED QUAIL.

Adult ♂ (No. 5870—collector's No. 183—near Tombstone, Arizona, April 9, 1881. F. Stephens). Head with a broad, convex, but not conspicuous crest of lengthened feathers. Above faded ashy-brown with a faint bluish cast on the nape and tail: beneath brownish-white, nearly uniform, but with a trace of ashy on the breast; entire head, including the throat, cheeks, forehead, crown and occiput (but not the crest), nearly uniform pale brownish-drab, without markings: feathers of nape, back anteriorly, and the breast, narrowly but sharply margined with black, giving the effect of imbricated scales, the feathers of the breast having in addition a concealed, obtusely-V-shaped marking of brown; feathers of the abdomen with transverse, sub-terminal, irregular bars of rusty-brown: those of the crissum with shaft streaks of rusty; tips of long feathers of the crest, inner edges of tertials, and shaft-streaks on feathers of the flanks, yellowish-white; no rusty patch on the abdomen.

\* This Bulletin, Vol. VI, p. 72.

† "ORTYX SQUAMATUS. *Corpore plumbescenti-cano, interscapulio pectoreque dilutionibus, horum plumis circulo gracili brunneo ad apicem cinctis, cristæ occipitalis apice, gula, abdomine medio, crisso, striisque abdominis laterum rufescenti-albis.*

MAGNITUDO *Ortygis californiani*.

HABITAT IN MEXICO. IN MUSÆO SOC. ZOOL."—Zool. Journal, V, 275.

‡ In addition to the names *Ortyx squamatus* and *Callipepla squamata*, the synonymy of the species includes only two titles; viz. *Callipepla strenua*, Wagler, Isis, XXV, 1832, 278; and *Tetrao cristata*, De la Llave, Registro tremistre, I, 1832, 144. Wagler's diagnosis clearly applies to *C. squamata* proper; I have not been able to consult the other reference, but from the extracts given by Cassin (Ill., I, 1853, p. 133), especially the sentence, "It inhabits the *Mesquite* regions in Northern Mexico," I infer that De la Llave also described the same form.

Sexes similar.

*Habitat.* Arizona; New Mexico; east to Western Texas (El Paso). Table lands of Mexico.

***Callipepla squamata castanogastris* var. nov.** CHESTNUT-BELLIED SCALED QUAIL.

CH. SP. ♂ similis *C. squamata*, sed colore in toto magis plumbeo; capitis lateribus et vertice obscurioribus; macula ferrugineo-castanea in abdomine. ♀ dissimilis, pallidior ac sine macula castanea.

Adult ♂ (No. 6547—collector's No. 1640—Rio Grande City, Texas, November 11, 1880. M. A. Frazar). Entire upper parts, with sides of head, and a broad space across breast, deep bluish-cinereous, tinged with olive on the back, wings, and crown; throat deep buff. in marked contrast with the bluish of cheeks and breast; under tail-coverts and crissum warm brownish-cinnamon; abdomen pale brownish-orange, with a broad, elongate, central patch of dark rusty-chestnut; otherwise with the markings as in *C. squamata*.

Adult ♀ (No. 6546—collector's No. 1655—Rio Grande City, Texas, November 16, 1880. M. A. Frazar). Paler beneath than the ♂, and without any trace of the abdominal chestnut patch.

*Habitat.* Valley of the Lower Rio Grande in Texas; Eastern Mexico (New Leon).

The prominent differential characters of these two races may be more briefly given as follows:—

*C. squamata*.—General coloring pale and faded; crown and sides of head scarcely darker than throat, and rarely with any bluish tinge; no decided chestnut patch on abdomen; sexes similar.

*C. squamata castanogastris*.—General coloring deep and rich; crown concolor with back, and cheeks with breast,—both very much darker than throat; abdomen with a conspicuous central patch of solid rusty-chestnut; sexes dissimilar, the ♀ lacking the abdominal chestnut patch, and being much lighter colored than the ♂.

The individual and geographical variation shown by my series of eighteen specimens of *C. squamata* proper, is comparatively slight. New Mexican examples seem to be a trifle bluer than Arizona ones, and autumnal birds from both Territories are richer-colored than those taken in spring and summer; but all are very much paler than my types of *C. castanogastris*, while in none of them is there any decided chestnut patch beneath, the nearest approaches showing only a slight rusty tipping on a few of the feathers. I have not been able to examine as large a number of the Texas form, but Mr. Frazar, who has shot upwards of a hundred in the valley of the Lower Rio Grande, assures me that the adult male never lacks this conspicuous feature. The material in the National Museum, which Mr. Ridgway has kindly placed at my disposal, fully bears out the above generalizations.

The following specimens of *C. squamata* were collected by Mr. Stephens during his late trip.

6318, ♀ ad., Camp Bowie. January 10. Length, 10.60; extent, 14.80; wing, 4.53; culmen, .63.

6319, ♂ ad., same locality and date. Length, 10.60; extent, 14.90; wing, 4.57; culmen, .62.

36, ♀ ad., Cave Creek, March 12. Length, 10.20; extent, 15.20; wing, 4.80; culmen, .60.

183, ♂ ad., near Tombstone, April 9. Length, 10.30; extent, 14.40; wing, 4.50; culmen, .57.

194, ♀ ad., near Tucson, April 14. Length, 10.40; extent, 14.70; wing, 4.57; culmen, .61.

350, ♂ ad., Santa Rita Mountains, May 11. Length, 10.30; extent, 14.70; wing, 4.56; culmen, .61.

351, ♂ ad., same locality and date. Length, 10.70; extent, 15.30; wing, 4.65; culmen, .60.

352, ♂ ad., same locality and date. Length, 10.40; extent, 14.70.

422, ♂ ad., near Tucson, May 21. Length, 10.30; extent, 15.20; wing, 4.61; culmen, .59.

424, ♂ ad., same locality and date. Length, 11; extent, 15.20; wing, 4.68; culmen, .62.

532, ♂ ad., near Tucson, June 16. Length, 10.20; extent, 15; wing, 4.70; culmen, .60.

533, ♂ ad., same locality and date. Length, 10.40; extent, 15.10.

535, ♀ ad., same locality and date. Length, 10.60; extent, 15; wing, 4.58; culmen, .61. "About to lay."

536, ♂ ad., same locality and date. Length, 10.30; extent, 14.80; wing, 4.59; culmen, .60.

153. **Cyrtonyx massena** (Less.) Gould. MASSENA QUAIL.  
—Although Mr. Stephens made repeated efforts to obtain specimens of this Quail, only one pair was met with during his extended wanderings. I extract the following from his notes relating to this occasion. "I was walking up a gulch at the foot of a steep peak, when a pair of Massena Partridges rose from the grass about ten feet ahead of me. The female went first, closely followed by the male, which I recognized by the black under tail-coverts. I was carrying my gun on my shoulder, and before I got ready to fire they had passed over the adjoining ridge and disappeared in a gulch beyond. Upon looking there I flushed the male, which rose within six feet of me, but missed him as he wound through the thick brush. Taking a few steps further the female flew and I managed to secure her. Their flight was very swift and each, as it rose, uttered a low whistling *weeweewee*. The locality was rocky, with thickly growing junipers and oaks, and sacaton grass beneath." The bird is known in Arizona as the "Fool Quail" or "Fool Hen."

137, ♀ ad., Chiricahua Mountains, March 31. Length, 8.40; extent, 16.70; wing, 5; tail, 2.65; culmen, .62. "Iris dark brown. Thighs muscular. Flesh white."

154. **Ardea herodias** *Linn.* GREAT BLUE HERON.—A single bird of this species was seen April 23, on the river near Tucson.

155. **Herodias alba egretta** (*Gmel.*) *Ridg.* AMERICAN EGRET.—Only one specimen, Tucson, April 23.

156. **Nyctiardea grisea nævia** (*Bodd.*) *Allen.* NIGHT HERON.—Observed on the same occasion as the preceding.

157. **Tantalus loculator** *Linn.* WOOD IBIS.—A flock was seen July 16 at Yuma, in a slough near the Colorado River.

158. **Ægialites vociferus** (*Linn.*) *Cass.* KILLDEER PLOVER.—Several were observed late in April about some ponds near Tucson.

159. **Porzana jamaicensis?** (*Gmel.*) *Baird.* LITTLE BLACK RAIL.—On April 23 a small, black Rail, which Mr. Stephens is sure belonged to this species, was flushed from the edge of a marshy pool near Tucson. I cannot learn that either *jamaicensis* or its California race *coturniculus* has been previously reported from Arizona.

160. **Fulica americana** *Gmel.* AMERICAN COOT.—Numbers of Coots were seen at Tucson in the latter part of April. They frequented a series of shallow ponds near the river.

161. **Spatula clypeata** (*Linn.*) *Boie.* SHOVELLER.—Several of these Ducks were seen April 23, in the ponds just mentioned.

162. **Querquedula discors** (*Linn.*) *Steph.* BLUE-WINGED TEAL.—A fine adult male in the collection was taken May 5, at Tucson.

163. **Querquedula cyanoptera** (*Vieill.*) *Cass.* CINNAMON TEAL.—Two or three pairs were observed near Tucson on April 23.

164. **Erismatura rubida** (*Wils.*) *Bonap.* RUDDY DUCK.—A few individuals were met with in April near Tucson. This species was not found south of Utah by Mr. Henshaw.

165. **Hydrochelidon nigra** *Linn.* BLACK TERN.—On April 17 a female in full nuptial plumage was taken at Cienega Station. In company with several others it was busily employed in catching insects that were flying over a small meadow.

MEMORANDA OF A COLLECTION OF EGGS  
FROM GEORGIA.

BY H. B. BAILEY.

It was my fortune this summer to come into possession of a collection of eggs made in Georgia, between the years 1853 and 1865, by the late Dr. S. W. Wilson. The notes accompanying the same furnish the following memoranda which are of value, since few collectors have visited, or at least reported on, this locality. The collection was made chiefly on St. Simon's Island and in Wayne and McIntosh Counties. The eggs are remarkably well preserved, each set being packed carefully in a separate box labeled according to the old Smithsonian Catalogue. They are always accompanied by dates and sometimes by copious notes. The alleged nesting sites of a few of the species represented, are peculiar, and in the case of one or two, seemingly improbable. But the collection, as a whole, seems to have been so carefully identified that I give the notes as I find them leaving it to the reader to accept or reject such as he chooses. The field represented should be a profitable one for some of our present collectors to visit.

1. **Mimus polyglottus.** MOCKINGBIRD.—Nests in low trees and shrubs, near settlements; eggs four or five. A set taken April 1.

2. **Harporhynchus rufus.** BROWN THRASHER.—Nests in low bushes or in fence corners; eggs three or four. A set taken May 1.

3. **Sialia sialis.** BLUEBIRD.—Nests in hollow trees and similar places; eggs five. A set taken April 1.

4. **Polioptila cærulea.** BLUE-GRAY GNATCATCHER.—Nests either saddled on a branch of a tree or in a fork: eggs four or five. A set taken April 30.

5. **Lophophanes bicolor.** TUFTED TITMOUSE.—Nest of the hair of the hog and opossum, and the "epidermis" of pine leaves; in hollow trees. A set of five eggs, taken May 8, was in a small oak five feet from the ground.

6. **Parus carolinensis.** CAROLINA CHICKADEE.—Nest in a hollow stump, fence rail, or similar place near the ground; the bottom lined with cotton and other soft materials. A set of six eggs taken April 10.

7. **Sitta pusilla.** BROWN-HEADED NUTHATCH.—Eggs four, sometimes five. Nest in the stump of a large pine about two feet from the ground; after penetrating the bark a large cavity is completely filled with

cotton excepting a small place for the eggs. Four eggs of a set taken April 10 measure .60X.47; .54X.44; .57X.45; .55X.46.\*

8. *Thryothorus ludovicianus*. CAROLINA WREN.—Nests in hollow trees, holes in banks, or in outbuildings. A set of five eggs taken April 12.

9. *Telmatodytes palustris*. LONG-BILLED MARSH WREN.—Nests in high salt-marsh grass. A set of five eggs taken May 5.

10. *Cistothorus stellaris*. SHORT-BILLED MARSH WREN.—Nests in high grass. A set of these eggs taken May 18.

11. *Protonotaria citrea*. PROTHONOTARY WARBLER.—A nest, taken May 10, was three feet from the ground in a hollow stump of a sweet gum, in Altamaha swamp; eggs four.

12. *Helminthophila bachmani*. BACHMAN'S WARBLER.—Nests in low trees; eggs four. One of a set of four taken April 30 measures .74X.60. It is unlike any other egg that I am acquainted with. The ground-color is dull white; around the large end is a wreath of dark brown covering nearly one-third of the egg; while a few obscure spots of lilac are scattered over the rest of its surface. It has no resemblance to any Warbler's egg, and especially none to any of this genus.

13. *Helminthophila pinus*. BLUE-WINGED YELLOW WARBLER.—Nests in low bushes in the pine barrens; eggs four. A set taken April 29.

14. *Parula americana*. BLUE YELLOW-BACKED WARBLER.—Nests concealed in festoons of moss on trees; eggs four. A set taken April 23.

15. *Dendroeca dominica*. YELLOW-THROATED WARBLER.—Nests constructed with great care in pensile moss; eggs five. Those of a set taken April 24 measure respectively .75 X .51; .70 X .52; .73 X .53; .76 X .53; .73 X .52. Their ground color is gray, over which are fine dots of light brown, and a few spots and blotches of dark brown and purple near the larger end.

16. *Dendroeca pinus*. PINE-CREEPING WARBLER.—Nests on the horizontal branch of a pine tree, near the top; eggs four. A set taken April 14.

17. *Oporornis formosa*. KENTUCKY WARBLER.—Nests on ground, in swampy places. A set of five taken May 12.

18. *Icteria virens*. YELLOW-BREASTED CHAT.—Nests in low bushes, in moist places; eggs four. A set taken May 18.

19. *Myiodiotes mitratus*. HOODED WARBLER.—Nests in thick cane brakes, in swamps. A set of three eggs taken May 12.

20. *Vireosylva olivacea*. RED-EYED VIREO.—Nest pensile in a forked branch of a low tree; eggs three, rarely four. A set found May 4.

21. *Lanivireo flavifrons*. YELLOW-THROATED VIREO.—Nests pensile in trees; eggs three or four. May 14.

22. *Vireo noveboracensis*. WHITE-EYED VIREO.—Nests pensile in low bushes. A set of four eggs found April 21.

23. *Lanius ludovicianus*. LOGGERHEAD SHRIKE.—Nests in bushes or trees. A set of six eggs taken March 23; they lay even earlier.

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\* Measurements of eggs are given in hundredths of an inch.

24. *Progne subis*. PURPLE MARTIN. — Nests in hollow trees, etc., near houses; eggs five. May 18.
25. *Cotile riparia*. BANK SWALLOW. — Nests excavated in river banks; eggs five. April 20.
26. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW. — Nests in banks; eggs four or five. April 18.
27. *Pyrrhula erythrogastra*. SUMMER REDBIRD. — Nest loosely constructed of twigs on the horizontal branch of a pine, not very high. A set of four eggs taken May 8.
28. *Ammodramus maritimus*. SEASIDE FINCH. — Nests in low bushes, or in the high marsh-grass near the sea; eggs four. May 3.
29. *Peucaea aestivalis*. BACHMAN'S FINCH. — Nests built on the ground, in pine woods, carefully concealed under a tuft of grass, small palmetto, or low bush. The females are very close sitters; they always lay four eggs and raise two broods. An egg taken from a nest June 11 measures .74X.62. and is pure white; there were also three young birds just hatched.
30. *Pipilo erythrophthalmus*.\* TOWHEE. — Nests in low bushes, seldom on the ground; eggs four. May 1.
31. *Cardinalis virginianus*. CARDINAL GROSBILL. — Nests loosely constructed, in low trees or bushes. If discovered building they always desert the nest; eggs four. May 1.
32. *Passerina ciris*. PAINTED BUNTING. — Nests in trees or low bushes, especially among briars; eggs four. May 15.
33. *Molothrus ater*. COWBIRD. — Eggs laid in nests of small birds; one with a set of Red-eyed Vireo's eggs.
34. *Agelaius phoeniceus*. RED-AND-BUFF-SHOULDERED BLACKBIRD. — Nests near fresh-water ponds, in bushes, and among high grass; eggs three or four. May 18.
35. *Icterus spurius*. ORCHARD ORIOLE. — Nests pendulous, in trees; eggs five. May 10.
36. *Quiscalus major*. BOAT-TAILED GRACKLE. — Nests in trees or in the tall salt-marsh grass; eggs three, seldom four. They breed during April and May.
37. *Quiscalus purpureus*. PURPLE GRACKLE. — Nests in trees, seldom in the salt marshes; eggs three or four. April 15.
38. *Corvus ossifragus*. FISH CROW. — Nests in trees near the sea; eggs four. April 20.
39. *Cyanocitta cristata*. BLUE JAY. — Nests in trees; eggs four. May 1.
40. *Tyrannus dominicensis*. GRAY KINGBIRD. — Nests on the horizontal branches of oak trees, near the top, and loosely constructed of twigs, "with little or no lining"; eggs always three. Those of a set taken June 8 measure respectively: 1.03X.75; 1.06X.75; 1.08X.75; they are salmon-colored with blotches of reddish-brown on the large end.

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\* [Probably this was really the white-eyed form *P. erythrophthalmus alleni*.—EDS.]

41. *Tyrannus carolinensis*. KINGBIRD.—Nests in trees; eggs four. May 18.
42. *Myiarchus crinitus*. GREAT-CRESTED FLYCATCHER.—Nests in hollow trees; eggs five. May 13, 1853.
43. *Contopus virens*. WOOD PEWEE.—Nest saddled on the horizontal branch of a pine at a considerable elevation; eggs three or four. May 7.
44. *Empidonax acadicus*. ACADIAN FLYCATCHER.—Nests in Alatomaha River Swamp, in bushes. A set of three eggs taken May 13.
45. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD.—Nests in trees. No dates given.
46. *Chætura pelagica*. CHIMNEY SWIFT.—Nests in chimneys; eggs five. May 18.
47. *Antrostomus carolinensis*. CHUCK-WILL'S-WIDOW.—Eggs two, deposited on the ground in thick woods, during April and May. A set in collection taken May 5.
48. *Chordeiles popetue*. NIGHTHAWK.—Eggs two, deposited on the ground in fields or open places. April and May. A set in collection taken April 25.
49. *Campephilus principalis*. IVORY-BILLED WOODPECKER.—Nests in holes excavated, for the most part, in living trees very high from the ground. A set of four eggs were taken April 10, in Alatomaha Swamp. They measure respectively: .36X.95; 1.34X.98; 1.25X.95; 1.29X.98; while the eggs of a set of Pileated Woodpeckers in my collection average 1.42X.90.
50. *Picus villosus*. HAIRY WOODPECKER.—Eggs five, laid in hollows excavated in trees. April 8.
51. *Picus pubescens*. DOWNY WOODPECKER.—Breeding habits same as last. A set of five eggs taken April 12.
52. *Picus querulus*. RED-COCKADED WOODPECKER.—Holes excavated in high pine trees, mostly living ones; eggs four. May 18.
53. *Hylotomus pileatus*. PILEATED WOODPECKER.—Nests excavated in pine trees; eggs three or four. April 14.
54. *Centurus carolinus*. RED-BELLIED WOODPECKER.—Eggs laid in holes excavated in trees. A set of eggs taken June 3; eighteen days afterwards the parents had newly hatched young in the same nest. They breed from March until July.
55. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—Breeding habits similar to last; eggs five or six. June 4.
56. *Colaptes auratus*. YELLOW-SHAFTED FLICKER.—Nesting habits same as last. Set of six eggs taken June 1.
57. *Ceryle alcyon*. KINGFISHER.—Nests in holes excavated in steep banks of rivers; eggs six. May 7.
58. *Coccygus americanus*. YELLOW-BILLED CUCKOO.—Nests carelessly constructed on the horizontal branches of trees; eggs four. May 8.
59. *Coccygus erythrophthalmus*. BLACK-BILLED CUCKOO.—Breeding habits similar to last. Two eggs taken May 18.
60. *Conurus carolinensis*. CAROLINA PARAKEET.—A set of two eggs in the collection was not fully identified but undoubtedly belongs to this



species. The eggs, which were taken April 26, 1855, were deposited in a hollow tree, on the chips at bottom. One of them was sent to Mr. Ridgway who has kindly compared it with identified eggs, and who confirms the identification. The specimens measure  $1.44 \times 1.14$ ; and  $1.45 \times 1.10$ . They are creamy-white, and pointed at one end.

61. *Aluco flammeus americanus*. BARN OWL. — A set of eggs taken from the tower of St. Paul's church, Charleston, S. C., December 18.

62. *Scops asio*. LITTLE SCREECH OWL. — Eggs four, deposited in hollow trees or a deserted Woodpecker's hole. April 1.

63. *Bubo virginianus*. GREAT HORNED OWL. — Eggs laid in deserted nests of the Bald Eagle, Osprey, or Red-tailed Hawk, or sometimes in a hollow tree; they are never more than two in number. May 20 (evidently a second laying).

64. *Tinnunculus sparverius*. SPARROW HAWK. — Nests in deserted Woodpecker's holes. A set of four taken April 10, was in a dead pine tree; the pair afterwards reared a brood in the same nest.

65. *Pandion haliaëtus carolinensis*. FISH HAWK. — Nests in high trees, in most instances either dead or decaying ones; eggs three or four. Breeds through April and May.

66. *Ictinia subcærulea*. MISSISSIPPI KITE. — Nest in a lofty cypress tree, at the top on a horizontal branch, in Alatomaha River Swamp. June 8 the tree was felled, and the nest found to contain two eggs which were badly broken.

67. *Accipiter cooperi*. COOPER'S HAWK. — Nests in high trees; — similar to that of a Crow. May 6, set of three eggs.

68. *Buteo borealis*. RED-TAILED HAWK. — Nests in high pine trees; eggs always two. March 14.

69. *Buteo lineatus*. RED-SHOULDERED HAWK. — Nests in high trees; eggs two or three. April 26.

70. *Buteo pennsylvanicus*. BROAD-WINGED HAWK. — Nests in high trees; eggs three. April 28.

71. *Haliaëtus leucocephalus*. BALD EAGLE. — Nests on very high trees; breeds from November to April; eggs always two. A set in collection taken January 10.

72. *Cathartes aura*. TURKEY BUZZARD. — Eggs two, deposited on the ground under an inclining log, in thick places. Set taken April 7.

73. *Catharista atrata*. BLACK VULTURE. — Eggs two, deposited on the ground, or in a hollow log near the ground. A set taken March 26.

74. *Ectopistes migratoria*. WILD PIGEON. — Nests on trees. No dates given.

75. *Zenaidura carolinensis*. MOURNING DOVE. — Nests in trees, rarely on the ground; eggs two. April and May.

76. *Chamæpelis passerina*. GROUND DOVE. — Nests on the ground, very seldom on trees; eggs two. They breed from April until October.

77. *Meleagris gallopavo americana*. WILD TURKEY. — Nest in thick places in the woods, carefully concealed; eggs twelve to fifteen. April 18.

78. *Ortyx virginiana*. BOB WHITE. — Nests in the grass in woods, or old fields; eggs ten to fifteen. May 8.

79. *Ardea herodias*. GREAT BLUE HERON.—Nests near the top of very tall trees, sometimes several in the same tree; eggs three or four. March 4.

80. *Herodias alba egretta*. AMERICAN EGRET.—Nests on trees in fresh-water ponds; eggs three. April 18.

81. *Garzetta candidissima*. SNOWY HERON.—Nests in trees near water; eggs three. April 14.

82. *Hydranassa tricolor ludoviciana*. LOUISIANA HERON.—Nests in trees near water; eggs three. April 18.

83. *Florida caerulea*. LITTLE BLUE HERON.—Nests in trees; eggs three. April 15.

84. *Butorides virescens*. GREEN HERON.—Nests in trees near water; eggs 4. April 18.

85. *Nyctiardea grisea naevia*. NIGHT HERON.—Nests in trees; eggs four, sometimes five. April 14.

86. *Nyctherodius violaceus*. WHITE-CROWNED NIGHT HERON.—Nests in trees near streams of water; eggs five. May 8.

87. *Ardetta exilis*. LEAST BITTERN.—Nests in the tall grass of fresh-water ponds; eggs five. May 18.

88. *Eudocimus albus*. WHITE IBIS.—Nests in trees in Alatomaha River Swamp; eggs three. April 20.

89. *Hæmatopus palliatus*. OYSTER CATCHER.—Nests on the sand near the sea; eggs four. May 18.

90. *Oxyechus vociferus*. KILLDEER.—Eggs four, deposited in a slight depression in the ground, on elevated places. April 1.

91. *Ochthodromus wilsonius*. WILSON'S PLOVER.—Eggs three or four, deposited on the high sandy beach. April 29.

92. *Symphemia semipalmata*. WILLET.—Nests in grass near the sea; eggs four. May 1.

93. *Himantopus mexicanus*. BLACK-NECKED STILT.—Nests on the sand, near the sea or salt ponds; eggs four. May 15.

94. *Rallus elegans*. RED-BREASTED RAIL.—Nests in fresh-water marshes, near ponds; eggs eight to ten. A set taken July 18 on Butler's Island, Georgia.

95. *Rallus longirostris crepitans*. CLAPPER RAIL.—Nests in salt marshes; eggs ten to twelve. April 18.

96. *Ionornis martinica*. PURPLE GALLINULE.—Nests in rice fields and high grass, near ponds of fresh water; eggs five to eight. A set in collection taken on Butler's Island, Georgia, July 18.

97. *Gallinula galeata*. FLORIDA GALLINULE.—Nests in fresh water ponds and near the margins of rivers; eggs six to eight. May 18.

98. *Aramus pictus*. LIMPkin.—Nests in brackish or salt ponds near the sea; eggs six or seven. June 17.

99. *Plotus anhinga*. SNAKE BIRD.—Nests on trees and bushes near fresh-water streams or ponds; eggs four. June 19.

100. *Rhynchops nigra*. BLACK SKIMMER.—Eggs three; laid on high sand near the sea. June 18.

101. *Larus atricilla*. LAUGHING GULL.—Nests on high sand near the beaches; eggs three. June 10.

102. *Sterna regia*. ROYAL TERN.—Nests on high sand; eggs three. No dates.

103. *Sterna cantiaeca acuflavida*. CABOT'S TERN.—Nests on sand. No dates.

104. *Sterna antillarum*. LEAST TERN.—Eggs three, laid on the high sand near sea. June 18.

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NOTES ON THE BREEDING HABITS OF MAXIMILIAN'S JAY (*GYMNOCITTA CYANOCEPHALA*) AND CLARKE'S CROW (*PICICORVUS COLUMBIANUS*).

BY B. F. GOSS.

In May, 1879, I took nine sets of the eggs of Maximilian's Jay in Colorado. Their nests were all found within from five to nine miles east and southeast of Fort Garland. This region lies along the western base of the Sangre de Christo Mountains, is broken by hills and spurs from the main range, and has an elevation of about 9000 feet. The nests were all in high, open situations, two of them well up the steep mountain sides, and none in valleys or thick timber. All were in small piñon pines from five to ten feet up, out some distance from the body of the tree, and not particularly well-concealed. They are large, coarse, and deeply hollowed structures, much alike, being made mostly of grayish shreds of some fibrous plant, or bark, which breaks up into a mass of hair-like fibres, these forming the lining, while some weeds and grass are worked into the general fabric. I did not measure any of them before removal, and afterwards accurate measurement could not be made, as, being loosely constructed, they spread and flattened. They must have been about as deep as wide, deep enough to receive the whole body of the bird, only part of the head and tail showing above the edge. The birds are close sitters, several not leaving till the nest was shaken, and I could have caught some of them with my hand. On being driven from the nest, they would alight on an adjoining limb, and, with

lowered head and half-extended wings, utter their peculiar querulous cry. One nest contained five eggs, six contained four each, and two three each; both sets of three were partly incubated. Two nests were taken May 5, five on the 10th, and two on the 11th, 1879. The eggs are quite pointed at the small end. The ground color is bluish white, splashed all over with small spots of dark brown, thickest at the large end. Thirteen eggs measure respectively:  $1.19 \times .88$ ;  $1.21 \times .93$ ;  $1.22 \times .92$ ;  $1.25 \times .91$ ;  $1.17 \times .87$ ;  $1.18 \times .84$ ;  $1.17 \times .85$ ;  $1.20 \times .82$ ;  $1.17 \times .80$ ; average,  $1.19 \times .87$ .

My friend, Mr. H. B. Bailey, has kindly sent me notes of a set of four, taken for him in New Mexico, June 5, 1882. He says: "My nest was in a piñon tree, ten feet from the ground. The inside is composed wholly of grayish shreds of some vine similar to grape-vine. The eggs are almost fac-similes of yours, but have a slightly lighter ground color. [His reference is to a set received from me.] They were hard sat on." His eggs measure  $1.20 \times .86$ ;  $1.19 \times .87$ ;  $1.25 \times .93$ ;  $1.15 \times .87$ ; average,  $1.20 \times .88$ .

The nest is easily seen, and I am surprised that so few have been found. The bird is a restless wanderer, choosing the most unfrequented places. It often changes its haunts, and may be plenty one year where it is scarcely found in another. Probably the food supply has something to do with its movements. It is gregarious, and partly so even in the breeding season. It is locally, and very appropriately, called the "Piñon Bird," for its home is in the piñon pines, and it is rarely seen far from them.

Clarke's Crow is a common resident of the region described, but has a higher range than Maximilian's Jay. I found it most abundant in the mountain valleys, above the foot hills. In that dry climate the trees on the sunny exposure of the valleys are dwarfed, scattering, and interspersed with thick bunches of bushes, while the opposite side, looking northward, is covered with a heavy growth of timber. It was in and around such timber that I found these birds, and there I looked diligently for their nests. Many times they showed great concern and watched me closely, peering down and scolding from the thick foliage overhead. I thought their nest must be near, and searched everywhere in the neighborhood, even climbing to the tops of high trees; but I have no doubt now that their nests were across the

valley, half a mile away. I spent more than two weeks in this fruitless search, returning every night to camp, tired and disappointed. Any one who has tramped over mountains, in the light air of 9000 feet elevation, will understand how exhausting such labor is; but I particularly wished to get the eggs of this bird, was sure they were nesting in the neighborhood, and did not like to give it up. One evening, after a particularly hard day's work, as I sat by my camp-fire, looking up the valley, one of these birds left the high timber and flew across to the other side. Its direct and silent flight suggested that it might be going to its nest, and that I had been looking in the wrong locality. Accordingly, with renewed hope, I started early next morning to the hill where I had seen it go. After climbing over the rocks and through the bushes for some time I sat down to rest, when I noticed something on a tree about thirty feet away that looked more like a squirrel's nest than anything else. On closer inspection, however, I saw that it was a bird's nest, and climbing up a short distance, was delighted to find a Clarke's Crow sitting on its nest. She sat very close, only leaving when touched by my hand. The nest was built near the end of a horizontal limb, about ten feet from the ground, in an open, conspicuous situation. It was bulky, coarsely constructed, and very deeply hollowed, the bird when on it showing only part of her bill and tail, pointing almost directly upward. She was soon joined by her mate, when, after hopping about in a listless manner for a few minutes, both disappeared. They were silent when near their nest, but noisy enough elsewhere. On further search I found several old nests and one new one, apparently abandoned. All were similar in construction and situation to the one described, and evidently belonged to the same species. The nest with young was found May 21. From finding these nests, and from other observations made, I am satisfied that Clarke's Crow breeds in open, warm situations, preferring steep hillsides; had I known this earlier I believe that I should have found more of their nests.

## IMMATURITY VS. INDIVIDUAL VARIATION.

BY NATHAN CLIFFORD BROWN.

Many readers of the Bulletin are doubtless familiar with a phase of plumage of *Zonotrichia albicollis*, occurring in spring, which appears to be the normal dress of this species in immaturity, indicating, therefore, that its representatives do not attain their finest livery until the second year of their existence. In this plumage the bird appears as follows: The back, wings, and tail are essentially as in most adult specimens. There are black maxillary stripes. The breast is dull gray, lacking the bluish cast seen in high plumage; it is distinctly streaked. The throat is grayish-white or rather clear gray, either slightly or not at all contrasted with the breast. The yellow before the eye is very limited in extent and of a dull, greenish tint. The superciliary and median coronal stripes are gray mixed with brownish and dusky. Brown rather predominates in the other markings of the head. In the middle of the breast is a dusky spot, much as in *Spizella monticola*.

Feeling that all the distinctive features of this attire indicated immaturity, I was surprised, in October of the present year (1882), to procure specimens of *Z. albicollis* unquestionably in their first year, as proved by careful dissection, clad in a dress practically identical with that of maturest spring birds. The circumstance naturally suggests the existence of two geographical races of this species, but the true explanation appears to be offered by evidence which I have recently accumulated in two precisely analogous cases,—those of *Loxia americana* and *L. leucoptera*.

The announcement that males of the two North American species of *Loxia* sometimes—nay often—assume their full reddish dress in the autumn of their first year, will excite the surprise and perhaps the incredulity of ornithologists; yet, unless osteological data which I have always considered infallible are to go for nothing, they certainly do so, and the greenish and yellowish examples, commonly called immature, simply illustrate remarkable and extreme individual variation.

On November 9, 1882, I found both species of Crossbills unusually numerous in Scarborough, Maine. Wishing to obtain a good autumnal series, I used my gun freely among them and procured specimens illustrating almost every known phase of plumage except that of nestlings. Of males there are highly-colored red birds, yellowish birds, greenish birds, and birds in a garb of mixed colors. In the case of some of them traces of the first plumage unmistakably indicate immaturity,\* and these birds agree exactly with all of the others in an osteological condition which stamps the entire lot as young of the year. The vertex of the skull is incompletely ossified: it is easily indented by the edge of my thumb nail; and it is *perfectly transparent*, the texture of the brain and its blood vessels being plainly discernible underneath. According to my experience, resulting from dissection of nearly four thousand specimens of North American birds, this is a condition which cannot exist in any Passerine species after maturity.

But for a severe attack of illness which, almost immediately after the capture of the birds above mentioned, put a stop to my investigations for the season, I should have had more elaborate evidence to offer as the result of systematic dissection. As it is, however, the decapitated bodies of my two rosiest examples of *Loxia leucoptera* passed under the knife of Mr. J. Amory Jeffries, of Boston. First stating that from this incomplete material no positive deduction can be made, Mr. Jeffries gives his opinion of the comparative maturity of the specimens as follows:

“The fasciæ joining the borders of the iliac bones to the vertebræ seem to be less dense and broad than in most adult Finches. The syrinx appears to be rather small for a Sparrow (though not knowing the species I cannot be positive), which points to youth. Certain divisions and relations of the muscles point to the same conclusion. The same is true of the flexible tendons of the extensor muscles of the back. The condition of the testes and vasa deferentia—both specimens being males—points to a young bird. On the other hand, I can find nothing indicative of extreme age or that is diagnostic of adult life. Finally, the birds would seem to me to have been hatched in the spring and shot in the fall.”

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\* There are such specimens of *L. leucoptera* in the reddish phase.

It can hardly be doubted that many similar examples of extreme individual variation remain to be detected. Among the Terns two cases almost exactly parallel with those I have mentioned have already been brought to light by Mr. William Brewster,\* though in these instances the author's arguments were based wholly upon the evidence offered by plumage, and, as a result, a generally accepted species was reduced to the rank of a synonym. A state of things no less remarkable is now familiar to ornithologists in the frequent melanism, partial or entire, seen in several species of Hawks; in the pure dichromatism of certain Owls and Herons; and in the irregularity with which the waxy appendages are assumed in the genus *Ampelis*.

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## NEST AND EGGS OF LECONTE'S THRASHER (*HARPORHYNCHUS REDIVIVUS LECONTII*).

BY G. HOLTERHOFF, JR.

In an article published in the "American Naturalist" for March, 1881, I gave a short description of the nest and eggs of Le Conte's Thrasher. As I believe these to be the first eggs known of this rare Thrasher, and as yet unique, I will endeavor to give a more complete and exact description of the set. The "find" was made near a small station on the Southern Pacific Railroad, called Flowing Wells. This is in the heart of the Colorado Desert, about seventy-five miles north of Fort Yuma. The country thereabout is a barren, sandy desert, broken by an occasional dry arroyo or river bed, scarce worthy of the name, as they are only rivers when bearing off the deluge from some fortuitous cloud-burst. Scattered sparingly along the course of these fickle streams is a stunted growth of mesquite and palo-verde trees, the commonest and most typical forms of desert vegetation. It was while wandering up one of these arroyos, wearied and almost parched by the fierce heat, that I caught sight of a dusky-gray bird flitting from bush to bush, always in short, jerky flights, and close to the ground. Expectation cheered my footsteps. The bird, alighting

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\* Some Additional Light on the so-called *Sterna Portlandica*, Ridgway. Ann. Lyc. Nat. Hist., N. Y., Vol. XI, pp. 201-207.



at the foot of a bush, would disappear for a time within its branches, then emerging suddenly near the top, pause for an instant as if to see if the coast was clear, and then resume its short ungraceful flight. Being about the only bird seen for some little time, I sat down in the shade of a mesquite to watch its course and movements. After a series of short progressions it disappeared in a thick palo-verde tree and there remained so long that I became suspicious, and, cautiously approaching, had the satisfaction of seeing it at home. I paused, breathlessly, but not before the shy denizen had seen my approach, and, silently dropping from her abode, had flown into a neighboring bush. I eagerly examined the nest, found it contained two eggs, and then withdrew to my former concealment to await the owner's reappearance. This was not immediate, for it seemed shy of returning, and when at last it did so, it was by a round-about course as if wishing to divert attention from the nest. Alighting again in the palo-verde, it paused for an instant on a lower branch, and that instant sufficed to end its earthly career. Securing my prizes, I loitered around the neighborhood for some time, hoping in vain to see the mate; but if present it skulked so closely within the thickets as to evade detection.

The nest, situated about five feet from the ground, was a very bulky affair, set so loosely and carelessly amid the branches that a considerable foundation had been thrown together before the structure was firm enough to bear the nest proper. This was composed of the thorny sticks and twigs of mesquite, loosely intercrossed, and the interior rather neatly lined with reddish fibres and rootlets. The external dimensions were about nine inches in depth and six inches in width at the top; interior, depth three inches and width about four inches. The cavity was deep enough to conceal the sitting bird, except as to its projecting tail. The two eggs were fresh and presumably an incomplete clutch. They are of a light pea-green color, sparsely marked with fine reddish specks, most thickly at the larger end. In shape they are elongate and tapering, more so than those of allied species, and they come nearer to those of *H. curvirostris* than any other species as yet compared. They measure respectively 1.17 by 0.78 inches and 1.13 by 0.77 inches. This bird was the only one of the species met with, and no other nests, old or new, were seen in this locality or elsewhere in the Desert.

## Recent Literature.

THE TRANSACTIONS OF THE LINNÆAN SOCIETY.\*—For some time past it has been rumored that the Linnæan Society of New York contemplated publishing "Transactions," and more recently these reports have received substantial confirmation by the appearance, in advance, of extras of papers by Dr. Merriam and Mr. Bicknell; closely following these comes the volume of which they form a part. It is large octavo of one hundred and sixty-eight pages, illustrated with a frontispiece—a portrait of Linnæus from an old engraving in the possession of Mr. L. S. Foster, by whom it is contributed.

From the introductory announcement we transcribe the following explanation of the origin and future aims of the Linnæan Society:

"The Linnæan Society of New York was founded March 7, 1878, by the following-named gentlemen:—H. B. Bailey, John Burroughs, Ernest Ingersoll, Franklin Benner, Harold Herrick, Newbold T. Lawrence, William C. Osborn, Eugene P. Bicknell, Dr. Frederick H. Hoadley, C. Hart Merriam."

"Abstracts of the proceedings of the Society, and papers read before it, have appeared in different scientific serials, but much valuable matter has been withheld from lack of a direct medium of publication. The necessity for such an organ has now become manifest, and the present volume is designed to be the first of a series in which papers coming before the Society may be permanently preserved."

The Officers for 1882-83 are: Eugene P. Bicknell, *President*; H. B. Bailey, *Vice-President*; L. S. Foster, *Recording Secretary*; Newbold T. Lawrence, *Corresponding Secretary and Treasurer*; Eugene P. Bicknell, Dr. C. Hart Merriam, and Newbold T. Lawrence, *Committee on Publication*.

The above array of names is a guaranty that anything published by the Linnæan Society will possess a high order of excellence. A glance through the pages of these "Transactions" is enough to show that this assumption is well founded. There are three papers: the first, by Dr. Merriam, on "The Vertebrates of the Adirondack Region, Northeastern New York"; the second, by Mr. William Dutcher, discussing the question, "Is not the Fish Crow (*Corvus ossifragus* Wilson) a winter as well as a summer resident at the northern limit of its range"; the third, by Mr. Bicknell, devoted to "A Review of the Summer Birds of a part of the Catskill Mountains, with prefatory remarks on the faunal and floral features of the region."

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\*Transactions of the Linnæan Society of New York. Volume I. Published by the Society, December, 1882. New York: Press of L. S. Foster, 35 Pine Street. MDCCC-LXXXII.

The present instalment of Dr. Merriam's paper does not extend to birds; hence it would hardly come within our legitimate field of criticism were it not that its introductory portion has a direct bearing on everything that is to follow. Chapter I is divided into seven sections, under which the location and boundaries, geological history, topography, climate, general features, botany, and faunal position of the region are fully and very ably treated.

"The Adirondacks proper, or the area to which the subject-matter of this paper is restricted, can be stated, with sufficient exactness, to lie between parallels  $43^{\circ} 15'$  and  $44^{\circ} 45'$  north latitude, hence measuring about an hundred and twenty miles (193.121 metres) in a north and south direction. The transverse diameter of the region is approximately of equal extent." . . . . "From a geological standpoint the Adirondacks are interesting as constituting one of the few islands that rose above the level of the mighty Continental sea previous to Paleozoic time." Their topography "is diversified, and in some respects peculiar. The mountains and short ranges of high hills have no regular trend, and conform to no definite axis. They are in no sense a chain of mountains, . . . but, on the contrary, consist of more or less irregular groups, isolated peaks, short ranges, and 'hog-backs,' scattered over the entire area—the highest to the eastward. . . . Nearly thirty peaks exceed four thousand feet (1,219.20 metres) in height, several are about five thousand (1,524 metres), and one, Mt. Marcy, attains an altitude of five thousand three hundred and forty-four feet (1,628.851 metres)."

The section relating to general features is especially full and interesting. The mountain tops, valleys, burnt tracts, beaver meadows, lake shores, and forest depths are treated in turn, and with a touch that shows the author's familiarity with the scenes of which he writes. The following seems to us one of the best of his descriptive passages:—

"Here is a sparkling trout stream, perhaps the outlet of a mountain lake; let us follow its winding course through yonder thicket of alders. Working our way through the tangled bushes we soon emerge into the open grassy bottom of one of the most beautiful and interesting of nature's many adornments—a Beaver meadow. Here, less than a century ago, might have been heard the splash and seen the hut of the sagacious Beaver. But, like the Moose that once roamed these mighty forests, they have, excepting a few isolated individuals, been exterminated or driven beyond our borders, till now these green meadows, with occasionally the buried ruin of an ancient dam, are about all that remain to remind us of the former existence here of one of the most curious, interesting, and typical of North American mammals.

"The dam has long since disappeared, and as it gave way the pond again became a narrow stream, spreading its way through the broad muddy bottom, now verdant with marsh grasses that spring from a thick bed of elastic *Sphagnum*. Upon this moist level now stand scattered clumps of feathery tamaracks; and here and there over the uniform light green of the meadow rise, in marked contrast, the odd-looking Blue

Gentians and the bright scarlet Cardinal Flowers. These are favorite haunts of the Canada Jay and, in the autumn, of immense flocks of Robins that come to feed upon the handsome berries of the mountain ash trees that always skirt the open places, easing the stiff edge of the bordering forest."

The section devoted to botany is occupied chiefly by nominal lists of the common forest trees, undershrubs, and smaller flowering plants of the Adirondacks. For the shrubs and smaller plants the scientific names alone are given, and these, printed as "solid matter," fill the greater part of two pages with italics,—a most unfortunate arrangement from a typographical point of view.

In the seventh section Mr. Merriam considers the faunal position of the Adirondacks and concludes that the region pertains to the Canadian Fauna. In support of this conclusion he cites the presence of such "eminently northern" mammals as the Lynx, Fisher Marten, Hudsonian Flying Squirrel, Jumping Mouse, Long-eared Wood Mouse, Porcupine, and Northern Hare; and among birds, the breeding of the "Hermit Thrush, Swainson's Thrush, Red-bellied Nuthatch, Winter Wren; Tennessee, Yellow-rumped, Blackburnian, Black and Yellow, Mourning, and Canada Flycatching Warblers; White-winged and Red Crossbills, White-throated Sparrow, Junco, Rusty Blackbird, Raven, Canada Jay, Olive-sided Flycatcher, Black-backed and Banded-backed Three-toed Woodpeckers, Spruce Grouse, Goshawk, and Golden-eyed Duck." From these lists, however, we should strike out the Jumping Mouse, Long-eared Wood Mouse, Northern Hare, Hermit Thrush, and Olive-sided Flycatcher, all of which occur too numerouslly in the Alleghanian Fauna to be regarded as typical Canadian forms.

There is a list, also, "of 'Subarctic' species of Lepidoptera collected in the immediate vicinity of Beaver Lake," and a provisional list of plants which the author regards as "fairly characteristic of a Canadian Flora."

Chapter II occupies eighty pages and carries the subject through Carnivora in Mammalia. As a contribution to our knowledge of the habits, food, times and manner of breeding, etc., of many of the northern mammals this paper is an important one, for the life-history of each species is given in the fullest manner, and usually from data supplied by the author's experience or that of equally careful observers among his acquaintances and friends.

Original matter of this kind has an interest and value immeasurably above that of the most able compilation, and it is doubly attractive when, as in the present case, it is presented in simple, concise, and hence forcible English. Not that our author's style is above criticism; on the contrary his sentences are sometimes loosely constructed, and he too frequently makes use of expressions which, to say the least, are undignified and in bad taste. He shows a tendency, also, to over-positiveness, especially in the discussion of questions about which there may still be room for a fair difference of opinion. These faults, however, are neither serious nor irremediable, and they are not likely to weigh heavily against

the clearness, piquancy and genuine sentiment that pervade his writing. On the whole the present chapter promises to be the most interesting and important contribution of its kind that we have had since Audubon and Bachman.

Mr. Bicknell's "Review" is based on observations made "during brief explorations of the more southern Catskills in three successive years: from June 6-15, 1880; 12-18, 1881; 24-27, 1882." On the latter occasion the writer was accompanied by Dr. A. K. Fisher of Sing Sing, N. Y. "Mr. R. F. Pearsall, of Brooklyn, also visited the same section of the region from May 30 to June 13, 1882. . . . and has kindly permitted me the use of his notes."

Twenty-five of the total fifty-six pages are devoted to prefatory remarks on the faunal and floral features and affinities of the Catskills. This introductory chapter is arranged on the same general plan as that of Dr. Merriam's paper and the subject is not less fully discussed. Mr. Bicknell evidently has a penchant for the analysis and comparison of faunæ, and his remarks in the present connection are decidedly interesting. He finds that the Catskill Mountain Region at large includes three distinct Faunæ,—the Carolinian, Alleghanian and Canadian. The Alleghanian prevails, and over the greater part of the less elevated country is nearly or quite pure, but in the lowlands along the Hudson it is perceptibly modified by the presence of certain Carolinian forms which extend up from the lower part of the valley of that river. In the higher valleys, and along the slopes of some of the mountains, the Alleghanian Fauna meets and mingles with the Canadian. The resulting association of species is decidedly curious: thus Mr. Bicknell has found such birds as the Winter Wren, the Slate-colored Snowbird, and the Black-throated Blue, Black-and-Yellow, Mourning, and Canadian Flycatching Warblers, actually occupying the same ground with Wood Thrushes, Chewinks, Field Sparrows, and even Large-billed Water Thrushes. The fauna of the higher summits and slopes is purely Canadian, although several of the most characteristic, non-migratory Canadian birds are wanting. Their absence, the author thinks, is due to the isolated position and limited extent of the region.

The list proper includes eighty-nine species and varieties. It is very fully annotated, a page or more being often devoted to a single species. A novel typographical feature is the presence of an apostrophe between varietal and generic scientific names when the specific name is omitted. There can be no objection to the practice of occasionally shortening a trinomial to a binomial when it must be often repeated in the text, but the use of the apostrophe in such a connection is arbitrary and whimsical.

We have another criticism: *viz.* that, Mr. Bicknell's style would be improved were he to condense and simplify his sentences, which are frequently involved, and sometimes positively obscure. His choice of words, too, is often unfortunate; — in short, he has yet to learn that the simplest English is the strongest and best.

Mr. Dutcher's paper is short, occupying less than three pages. The author argues that the Fish Crow is "a *permanent winter* resident in its northern habitat [*i. e.* the Lower Valley of the Hudson River, Long Island, the coast line of Connecticut, etc.), instead of a *rare summer visitor*" as has been generally supposed. The evidence cited is apparently conclusive, but its bearing would be more fairly stated if the word "*winter*" had been omitted from the sentence quoted above.

In general appearance the present volume offers little that can be criticized. The paper is good and the typographical execution nearly faultless. We do not like the use of capitals for proper specific names in the scientific titles, but that is a point on which naturalists are not agreed, the botanists refusing to accept the uniform rule followed by most zoölogists. The seemingly capricious use of capitals for the English names, especially noticeable in Dr. Merriam's paper, is less defensible, and we are at a loss to understand the total absence of an index, the volume otherwise being apparently complete.

But these are trifling matters and, as a whole, Volume I of the "Transactions of the Linnæan Society" is a credit to its originators and publishers. May the series which is to follow be a *very* long one. — W. B.

SAUNDERS'S NOTES ON SOME LARIDÆ FROM PERU AND CHILI.\*—The present paper treats of a collection of *Laridæ* made on the coasts of Peru and Chili by Capt. A. H. Markham of H. M. S. "Triumph." Fifteen species are represented; among these is a specimen (the third one known) of *Xema furcatum*, the large southern congener of the circumpolar *X. sabinii*. The text is accompanied by a beautiful colored plate, illustrating the adult and young plumages of this "rarest of Gulls, and one of the rarest of all known birds," now rediscovered after an interval of forty years' fruitless search.

Mr. Saunders is one of the few scientific writers who possess the happy faculty of making a technical treatise interesting to the average reader. The present paper is not inferior to his previous ones in this respect; moreover it has a direct value to the student of North American ornithology, for much of its subject-matter—especially the concluding remarks on the coloration, changes of plumage, distribution, and probable ancestral origin of the Gulls of the Pacific Ocean—relates to species which are included in the North American Fauna. — W. B.

HOFFMAN'S LIST OF BIRDS OBSERVED AT FORT BERTHOLD, D. T.†—In a paper of about nine pages Dr. Hoffman gives the result of some

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\*On some Laridæ from the coasts of Peru and Chili, collected by Capt. Albert H. Markham, R. N., with Remarks on the Geographical Distribution of the Group in the Pacific. By Howard Saunders, F. L. S., F. Z. S. Proc. Zool. Soc. of London, June 6, 1882, pp. 520-530; with colored plate of *Xema furcatum* adult and young.

†List of Birds observed at Ft. Berthold, D. T., during the month of September, 1881. By W. J. Hoffman, M. D. Proc. Boston Soc. Nat. Hist., Feb. 1, 1882.

observations made during September, 1881, at Fort Berthold, Dakota Territory. Fifty-seven species were identified, a fair number considering the season and the limited time spent in the field. The annotations are usually very brief, one of the longest being that relating to the Bald Eagle, from which we quote the following: "During the last week of September 'Eagle Hunters' of the Hidatsa and Arikaras [Indians] started out for the purpose of catching these birds for their tail feathers, which are highly prized for head ornaments and war bonnets. The price paid for very ordinary feathers was seventy-five cents, while good ones brought a dollar and frequently a dollar and fifty cents apiece. The method adopted in catching eagles is as follows: after selecting one of the most elevated points of land, a hole is dug large enough to allow the watcher sufficient room to turn around in. Branches, leaves, and grass, are then laid across the opening so as to give everything the appearance of the surrounding country. A live rabbit or domestic fowl is then secured by a thong and placed over the top of the artificial surface in which openings are left for the hidden observer. Should an eagle alight to secure the quarry, he is immediately caught by the legs and tied. Often the captives are taken to camp to be plucked after which they are again set at liberty."

A novel feature of the list is that of the Indian names which are given for many of the common birds. With the exception of occasional bad spelling of scientific names the paper is well printed. — W. B.

CANADIAN BIRDS. — The report of the Ornithological and Oölogical Branch of the Ottawa Field Naturalists' Club for 1881, published in the "Transactions" of that Club, No. 3, pp. 26-34, consists of a general commentary on the bird-fauna, signed by Geo. R. White and W. L. Scott, and an Appendix, forming a "List of the Birds found in the vicinity of Ottawa City, specimens of which have been shot within the last few years." The list is briefly annotated, and contains 169 species of 120 genera and 39 families — among them *Podiceps occidentalis*. This is probably correct. But we are astounded to see in the list *Harporhynchus cinereus*! *Parus rufescens*! *Vireo pusillus*! *Glaucidium passerinum* var *californicum*! This of course puts the whole affair under a cloud as an incompetent and doubtless pretty nearly worthless performance. — E. C.

CORY'S BEAUTIFUL AND CURIOUS BIRDS. — Since our last notice\* of this work two parts have appeared. Part IV contains plates of *Pseudogryphus californianus*, our North American Condor; *Camptolæmus labradorius*, the Labrador Duck; and *Astrapia nigra*, the Incomparable Bird of Paradise. Part V has illustrations of *Epimachus magnus*,† the Magnificent Bird of Paradise, *Epimachus ellioti*, Elliot's Bird of Paradise, and *Pluvianus ægyptius*, the interesting Crocodile Bird of the Nile.

\*This Bulletin, Vol. VI, p. 240. For earlier notices see Vol. V, p. 236; Vol. VI, pp. III, IIII.

†The above name is appended to the plate but *Epimachus speciosus* is used at the head of the accompanying text, *Epimachus magnus* being placed in the list of synonyms.

These recent issues fully maintain the high order of excellence to which we have already called attention. We trust that the work is receiving a generous patronage. — W. B.

A CHECKING-LIST OF NORTH AMERICAN BIRDS. — We have received proofs of the Checking-list advertised by Messrs. Southwick and Jencks in the present number of this Bulletin. It is essentially a reprint of the numbers and English names used in Mr. Ridgway's late Nomenclature of North American Birds, with the addition of species and varieties since described or found within our limits. Everyone who has made extensive exchanges knows what a task it is to write out the necessary lists of duplicates and desiderata, while the alternative of using a list of numbers corresponding with those of one of the standard check-lists, is, if anything, worse. The present list is designed to remedy both evils. It is to be printed in small type and will occupy only two sheets of thin paper. We are sorry to see that the scientific names have been omitted, but this, doubtless, was unavoidable in the preparation of a sheet that is to be sold for two cents, nor is their absence likely to be regretted by the class of persons for whom the list is presumably intended. — W. B.

SHUFELDT'S CONTRIBUTIONS TO THE ANATOMY OF BIRDS.\* — This paper reaches us too late for anything but the briefest notice. It includes chapters on the osteology of *Speotyto cunicularia hypogæa*, *Eremophila alpestris*, the North American *Tetraonidæ*, and the *Cathartidæ*. These subjects have been already treated by Dr. Shufeldt in previous papers, upon which the present work is evidently based; but its subject-matter has been largely, if not entirely rewritten, and some unfortunate errors contained in earlier issues corrected. The text is illustrated by numerous wood-cuts, some of which are apparently new, while others will be recognized by those who are at all familiar with the "History of North American Birds." The presence of these figures in a work on osteology seems to us about as appropriate as would be that of illustrations of the characteristic scenes frequented by the birds under discussion. Such a stricture, however, will not apply to the full-page lithographs by Sinclair & Son, for these acceptably present the crania and other osteological characteristics of the species treated. The paper on the *Cathartidæ* with its accompanying plates, is entirely new matter. — W. B.

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\* Contributions to the Anatomy of Birds. By R. W. Shufeldt, M. D., Captain, Medical Department, U. S. A., member of the Philosophical, Anthropological, and Biological Societies of Washington, Honorary Curator of the Section of Avian Osteology of the Smithsonian Institution. Twelfth Ann. Rep. U. S. Geol. and Geog. Surv., F. V. Hayden, U. S. Geologist-in-charge. 1882, pp. 593-806. Plates I to XXIV. Cuts in text.



## General Notes.

**BENDIRE'S THRASHER** (*Harporhynchus bendirii*) IN COLORADO. — On May 8, 1882, while collecting near Colorado Springs with Mr. J. A. Allen, I made a most unexpected capture. The morning was a stormy one and thousands of migrants, driven in from the plains, had sought refuge among the foot-hills. So great was the "rush" of birds that at times we were fairly bewildered, scarce knowing what to select from the swarms that filled every thicket and sheltered hollow. At the height of the excitement a shy, pale-colored bird, which Mr. Allen had been pursuing along a steep hillside, alighted near me, just showing the top of its head above a large boulder. Without having the faintest idea what it was, I fired, and going to the spot picked up a Bendire's Thrasher. My surprise and pleasure can be best understood by those who have had similar experiences.

The specimen, which is in perfect spring plumage, proved to be a female. It is, so far as I know, the only one that has ever been taken north of Arizona. From its limited distribution in that territory and the peculiar character of the country which it normally inhabits, there is every reason to assume that the present occurrence is a purely fortuitous one. — WILLIAM BREWSTER, *Cambridge, Mass.*

**THE WATER THRUSH IN CONFINEMENT.** — During the early part of the summer of 1881, one of my juvenile attendants stopped me on my official inspection around the Garden, remarking that he had captured a half-drowned Sparrow, and asked if it should be given to the rattlesnakes. On examination, to my surprise, it proved to be a Water Thrush (*Siurus naevius*), with its plumage so water-soaked that it was unable to fly. I had it placed in one of the aviaries in company with several specimens of *Turdus mustelinus*, *T. fuscescens*, *Mimus carolinensis*, *Harporhynchus rufus*, etc., where it soon recovered and could be seen daily, busily engaged in capturing the insects attracted by the prepared food placed in the aviary. As the cold weather approached and its insect food failed, it changed its diet to the prepared food, and is still alive, in fine plumage, having safely passed through two moults. — FRANK J. THOMPSON, *Zoölogical Garden, Cincinnati, Ohio.*

**AN INTERESTING FLIGHT OF PINE FINCHES.** — A recent letter from Johnathan Dwight, Jr., of New York, contains the following interesting note which I have his permission to publish.

"When at Monticello (New York), early in October, I saw several small flocks of Pine Finches (*Chrysomitris pinus*). At Fort Hamilton, on October 21, their numbers were phenomenal. There were hundreds, and perhaps thousands, in flocks of from a dozen to sixty or seventy. A curious fact is that when we first saw them—about nine o'clock A. M.—every flock

was flying in a north-westerly direction, at a short distance from the shore, and all kept on without stopping as far as we could watch them. Mr. De L. Berier, who was with me, had never met with the species before. By posting ourselves in their line of flight we secured as many as we wanted. One shot brought down four and a Goldfinch (*C. tristis*), there being a few of the latter occasionally mingled with them. Later in the day we found *C. pinus* everywhere, usually feeding in corn-fields. They were equally abundant on the 22nd, but their morning flight was not repeated. The weather on the 21st was fair; on the 22nd, threatening rain. I can think of no satisfactory explanation of this mysterious migration, unless it be that the birds were intending to cross the Narrows; but if so, why did they not stop?"—WILLIAM BREWSTER, *Cambridge, Mass.*

ON LECONTE'S BUNTING (*Coturniculus lecontei*) AND OTHER BIRDS OBSERVED IN SOUTH-EASTERN ILLINOIS. — While hunting Prairie Chickens on Sugar Creek Prairie, in the southern portion of Richland Co., Illinois. October 27 and 28, 1882, I was somewhat surprised to find Leconte's Bunting there in great abundance; also Henslow's, which, however, was less numerous. The locality where the Leconte's Buntings were first observed consisted of a patch of "open" prairie 160 acres in extent, entirely overgrown with iron-weeds (*Vernonia noveboracensis*) mixed with occasional patches of prairie grasses—the only part of the prairie not under cultivation. They were found, however, almost everywhere, grassy places being mostly affected. In flushing them it was almost necessary to kick them from the grass, and it was very rarely one would start up farther in front than a dozen feet. Their flight, like that of *C. henslowi*, was very irregular, making it difficult to shoot them, but they could be easily distinguished from individuals of that species by the conspicuously lighter, more yellowish coloration. A few individuals of *Peucaea illinoensis* were also noticed in weedy places, along fences, etc., but being provided only with heavy charges of coarse shot no specimens were secured. Near a farm house a pair of Mocking-birds was observed on the date mentioned, and I was informed they nested in the orchard every season, while the species was of regular if not common occurrence in the vicinity.—ROBERT RIDGWAY, *Washington, D. C.*

NOTE ON "PASSERCULUS CABOTI."—This name only occurs in Baird, Brewer, and Ridgway's Hist. of N. A. Birds, Vol. II, plate xlv, fig. 9—there being no description or text accompanying the figure, which is taken for specimen No. 62,373, Mus. Smiths. Inst., from Nahant, Mass. The bird is in fact a young *Melospiza palustris*, in a plumage hitherto unrecognized, in which there is a decided yellow loreal spot, and a vague yellowish suffusion of the cheeks and throat. I lately received a Swamp Sparrow from S. W. Willard, of West DePere, Wisconsin, who was in doubt of the identification, as my "Key" says of the species, "no yellow anywhere." The yellow spot is quite strong—about as in *Ammodromus maritimus*, and nearly as bright as in *Zonotrichia albicollis*. On examining the type of "*Passerculus caboti*," through Mr. Ridgway's attentions, I find it to be the same thing.—ELLIOTT COUES, *Washington, D. C.*

THE CARDINAL GROSBEEK IN MASSACHUSETTS.—On November 14, 1880, Mr. J. E. Fowle took a Cardinal Grosbeak (*Cardinalis virginiana*) in this place. It was with Chickadees (*Parus atricapillus*) hopping around on low bushes. It did not have the appearance of an escaped cage bird, such as worn tail feathers, long claws, etc.—E. H. RICHARDS, *Woburn, Mass.*

CROWS FISHING. — *A propos* of some notes recently published by Mr. Chamberlain on the fish-eating propensities of the Crows of New Brunswick, Mr. Manly Hardy writes me that he has twice seen Crows fishing in the Penobscot River near Bangor. On one occasion several of them were flying about over the water occasionally dipping down like Swallows, and seizing some floating matter which he thought might be offal from vessels. At another time they were making frequent forays from a boom-pier, to which they returned after each flight. They often struck the water with sufficient force to violently agitate its surface but never actually dove.

Mr. Hardy also speaks of their eating sea-urchins and other shell-fish, a habit which, of course, has been already reported; and he has known them to devour a string of twenty good-sized trout which had been left in a spring under water, well concealed, as he supposed, by the overhanging alders. — WILLIAM BREWSTER, *Cambridge, Mass.*

THE SCISSOR-TAIL (*Milvulus forficatus*) AT NORFOLK, VIRGINIA. — In January, 1882, there was sent to the Smithsonian Institution, by Mr. R. B. Taylor, of Norfolk, Va., a fine specimen of this species which that gentleman had shot January 2 in his door-yard in that city. The specimen was sent in the flesh, and being too much decomposed to skin, is now preserved in alcohol in the U. S. National Museum (Catal. No. 85,934). — ROBERT RIDGWAY, *Washington, D. C.*

THE CALLIOPE HUMMINGBIRD AND PYGMY OWL IN MONTANA. — The past season I had the pleasure of capturing in the Belt Mountains, the two following western birds: *Stellula calliope* Gould, ♂ Gold Run, May 24, 1882; *Glaucidium gnoma* Wagl., ♂ Gold Run, April 14, 1882. They are the only individuals of the species I have ever seen, and are certainly rare in this part of the Territory. — R. S. WILLIAMS, *Gold Run, Mont.*

ON SOME REMARKABLE POINTS OF RELATIONSHIP BETWEEN THE AMERICAN KINGFISHERS. — In handling specimens of the American Kingfishers the writer has often been impressed with some very curious features of relationship which he does not remember to have seen noticed, and which, therefore, he takes this opportunity of bringing before the readers of the Bulletin.

The American Kingfishers, so far as known, comprise six species,\* all belonging to the genus *Ceryle*. These six species fall into three very

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\* Two geographical races, which pass current for "species" are not included, these being *C. stellata*, Meyen, and *C. cabanisi*, Tschudi, the former belonging to *C. torquata*, Linn., and the latter to *C. americana*, Gm.

distinct groups, each distinguished by a particular style of coloration, and composed of two species, *one of which is an almost exact miniature of the other*. This curious, and so far as I know unparalleled, case may be illustrated by the following tabular statement:—

GROUP I. Color above, bluish plumbeous; throat and collar round neck, white; a plumbeous pectoral band, behind which there is more or less of rufous, at least in the female.

Larger species, *C. torquata* (Linn.).

Smaller species, *C. alcyon* (Linn.).

GROUP II. Color metallic bottle-green above, the throat and nuchal collar, white; a bottle-green pectoral band, behind which there is more or less of rufous in the female.

Larger species, *C. amazona* (Lath.).

Smaller species, *C. americana* (Gm.).

GROUP III. Color above, metallic bottle-green, the throat and nuchal collar, orange-ochraceous; lower parts rich orange-rufous, the male with a pectoral band of white and dark-green bars.

Larger species, *C. inda* (Linn.).

Smaller species, *C. superciliosa* (Linn.).

The curious nature of the case involves several other facts which may furnish rich material for investigation to those engaged specially in the study of the origin of species and the various problems connected therewith.

In the first place, the difference between the "homochromatic" species (if such a term may be used for those resembling one another in color), decreases in regular ratio from Group I to Group III; in other words, while the difference in coloration between *C. torquata* and *C. alcyon* is very marked (so far as the lower parts are concerned), the differences of coloration between *C. inda* and *C. superciliosa* are confined to the merest details; while *C. amazona* and *C. americana* differ from one another less than do the species of Group I, but more than those of Group III.

Scarcely less curious is the circumstance that between the largest species of Group I (*C. torquata*), which for size may be compared with an Ivory-billed Woodpecker, and the smallest of Group III, which is scarcely larger than a White-bellied Nuthatch, there is a regular gradation in size, the species standing thus, in the order of their relative dimensions.

- |                             |   |            |
|-----------------------------|---|------------|
| 1. <i>C. torquata</i> ,     | } | GROUP I.   |
| 2. <i>C. alcyon</i> ,       |   |            |
| 3. <i>C. amazona</i> ,      | } | GROUP II.  |
| 4. <i>C. americana</i> ,    |   |            |
| 5. <i>C. inda</i> ,         | } | GROUP III. |
| 6. <i>C. superciliosa</i> , |   |            |

As another noteworthy fact, it may be stated, however, that 2 and 3 on the one hand, and 4 and 5 on the other, are more nearly equal in size than are 1 and 2, 3 and 4, or 5 and 6. — ROBERT RIDGWAY, *Washington, D. C.*

RICHARDSON'S OWL IN SOUTHERN NEW HAMPSHIRE.—On December 15, 1879, I took a female *Nyctala tengmalmi richardsoni* at Hollis, New Hampshire. It was in a small grove of white pines, and was sitting bolt upright by the side of a trunk about ten feet from the ground. It was wide awake, for it watched me closely as I stepped back in order not to mutilate it. The weather was mild at the time with about three inches of snow on the ground.—WILLIAM H. FOX, *Washington, D. C.*

THE BURROWING OWL IN FLORIDA.—Mr. Chas. W. Gunn, of Grand Rapids, Mich., writes of the abundance of this bird in certain localities in Florida. "Hearing of a small Owl living in burrows in the ground, dug by itself, in the prairies east of the Kissimmee River, I ascertained beyond doubt that it is the *Speotyto*. Mr. Parker, state representative, who lives at Fort Bassenger, tells me they are very common on the prairies north and east of the Fort, where a dozen can be shot in an hour."—ELLIOTT COUES, *Washington, D. C.*

NOTE ON THE MISSISSIPPI KITE.—Dr. J. H. Mellichamp, of Bluffton, South Carolina, sends us a specimen of *Ictinia mississippiensis*, with a letter containing interesting notes on the bird as observed in that locality. About the second week in August several of these birds were observed, usually in pairs, hovering and soaring at a considerable height over the village, from morning till night, occasionally swooping down upon their prey among the oak-trees. Their motions were very graceful as they poised and floated, with their heads bent down in eager watch for their prey, occasionally uttering their peculiar cry. A specimen having been brought down from a great height, about the first of September, the rest disappeared, and were not seen again. Upon examination the stomach was found to be crammed with "locusts" (cicadas), among which were a few "katyids." A countryman who had killed one of these Hawks at his place informed Dr. Mellichamp they were there much less shy than they were here over the village, and that his poultry did not show the fear of them which they manifested for Hawks of other species. The writer considers the birds strangers in his locality, which is on the mainland, along May River, midway between Beaufort, S. C. and Savannah, Ga.—ELLIOTT COUES, *Washington, D. C.*

OCCURRENCE OF THE SWALLOW-TAILED KITE IN MASSACHUSETTS.—Mr. Raymond L. Newcomb informs me that he has in his possession a stuffed specimen of *Elanoides forficatus*, shot near the town of West Newbury, Essex Co., Mass., on the last of September, 1882. This is believed to be the first authentic capture of the kind on record for New England.—ELLIOTT COUES, *Washington, D. C.*

THE BALDPATE IN RHODE ISLAND.—The American Widgeon or Baldpate (*Mareca americana*) has been unusually abundant in the waters of Southern Rhode Island during November, and the first week of December, 1882. About December 1 a gentleman brought in a bunch for identi-

fication, and at the same time informed me that he had just killed twenty-four.—F. T. JENCKS. *Providence, R. I.*

GEOGRAPHICAL VARIATION IN SIZE AMONG CERTAIN ANATIDÆ AND GRUIDÆ. — While much has been written on the subject of geographical variation in size among birds, I do not remember having read anything bearing upon the following apparent exception to the rule of larger size to the northward. In *Birds of the Northwest* (p. 723) Dr. Coues has called attention to "something very curious in the relationships that many birds of the families *Colymbidæ* and *Podicipidæ* bear to each other," many of the species of these two families having a "*fraterculus*" or "little brother," that is to say, a representative species differing chiefly if not only in its smaller size. In the family *Anatidæ* there are several similar cases, with this difference: That, whereas in the case of the Loons and Grebes all the *fraterculi* are of more southern range than their larger representatives, just the reverse is the case among the Geese, and also, in one instance at least, among the Cranes. As examples the following couplets may be cited:—

SOUTHERN FORM.	NORTHERN (SMALLER) REPRESENTATIVE.
<i>Olor buccinator.</i>	<i>O. columbianus.</i>
<i>Bernicla canadensis.</i>	<i>B. hutchinsi.</i>
<i>Bernicla occidentalis.</i>	<i>B. leucoparia.</i>
<i>Fulix marila.</i>	<i>F. affinis.</i>
<i>Grus pratensis.</i>	<i>G. canadensis.</i>
And among European species —	
<i>Anser albifrons.</i>	<i>A. erythropus.</i>
<i>Olor cygnus.</i>	<i>O. bewicki.</i>

Some of the above-named representative forms are specifically distinct, while others are allowed only the rank of geographical races; but in either case, the interesting question arises: Why do these particular examples offer so marked an exception to the acknowledged law of increased size to the northward?

The larger average size of North American specimens of certain *Anatidæ* compared with European examples of the same, or representative, species, is another "law" of geographical variation which I do not remember to have seen noticed; yet it is a fact which has frequently come under my observation when making comparison of material from the two continents. In several instances it forms almost the only character upon which subspecific separation is based, as in the case of the White-fronted Geese (*Anser albifrons* and *A. gambeli*) and the Golden-eyes (*Clangula glauciun* and *C. americana*). The difference seems to hold good in other species also, as the Mallard (*Anas boscas*) and Pintail (*Dafla acuta*), in both of which, so far as my observation goes, American specimens are constantly larger than European.—ROBERT RIDGWAY. *Washington, D. C.*

CASPIAN TERN IN OHIO. — Mr. Frank J. Thompson, of the Zoological Garden of Cincinnati, informs me of the capture of three specimens of *Sterna caspia* in that vicinity, about Oct. 9, 1882. In company with as

many others of the same species they were found on an "ice-pond" a few miles north of the Garden. The three secured were all killed at one shot. Mr. Thompson also writes that Mr. Dury has a fourth example which was taken on the Little Miami River about Oct. 15, 1882. Such dates and locality would both appear to be exceptional. — ELLIOTT COUES, *Washington, D. C.*

POLYGAMY AMONG OSCINES. — A letter received from Prof. F. E. L. Beal, of the Iowa Agricultural College, gives some interesting data upon this subject, in the cases of *Agelaius phoeniceus* and *Sialia sialis*. Having often been struck with the numerical preponderance of female Marsh Blackbirds, Professor Beal made in the spring of 1881 special examination of a small piece of swamp in which he always found one male and three to seven females. For two weeks, during which the place was carefully watched, only one other male made his appearance upon the scene, and he was at once attacked and routed by the one in charge of the premises. This past spring Professor Beal found one male and two females domiciled on a small prairie slough. Both nests were discovered, each containing four eggs, and the course of events was watched until the young were fledged — the arrangement remaining always the same.

The case of the Bluebird is given on hearsay, but seems perfectly authentic. A trio of these birds occupied two niches in the chimneys of the gas works at the college there, and raised two broods. The male paid equal attention to both females, often passing directly from one nest to the other, and was seen in congress with each of the females in the course of a few minutes. — ELLIOTT COUES, *Washington, D. C.*

THE PRESCIENT POWER IN BIRDS. — I wish to take friendly issue with Mr. Henshaw over one of the statements made in his recent article "On the Decrease of Birds." Alluding to the extermination of Purple Martins one season at Cambridge, soon after their arrival, Mr. Henshaw says\* in substance that facts of this sort sufficiently refute the superstition that birds are able to foretell the weather. I do not believe that a majority of observers are with him in that opinion. Because the Martins apparently missed it on the occasion cited, does it follow that they are wholly without that "mysterious faculty" which enables them to avoid tempestuous weather, *if they wish to?* And granting that this occurrence does prove the Martins incapable of taking an anticipative view of the weather, I refuse to admit that all migratory species, or even a majority of them, are similarly lacking. My own field of experience has gradually confirmed me in the belief† that at least many of our birds are able, by a faculty which most emphatically is "mysterious," to foresee a coming storm hours before any signs of such a storm are visible to human eyes.

Let me instance a circumstance bearing upon this matter: Oct. 26,

\* Bull., Vol. VI, No. 4, p. 193, foot-note.

† So eminent an authority as Mr. J. A. Allen has reached the same conclusion. See "Century Magazine," Oct., 1881, p. 938.

1873, was one of those beautiful days with which New Englanders are often blessed in autumn. The air was like crystal and scarcely a cloud appeared in the sky from dawn to dark. At my first glance out of doors, I saw that there was a great flight of Hermit Thrushes. They were in the woodbine about my window, in the roof gutter beneath it, and upon the ground, everywhere, in great numbers. Upon going out I found them actually swarming about the neighborhood. Business called me down town during the day, and in the latter part of the afternoon I found but few Thrushes in the outlying country. Next morning I awoke to find a violent rain-storm prevailing, which continued unabated until night.

Now I believe in a liberal deduction from such facts as the above and, per contra, such as Mr. Henshaw relates about the Martins. Is it not fair to accept such occurrences as indicating: (1) That many birds are forewarned of severe storms. (2) That they sometimes improve their opportunity to get out of the way. (3) That they sometimes, especially in the spring, prefer to run the risk of exposure. — NATHAN CLIFFORD BROWN, *Portland, Maine.*

MIGRATION OF BIRDS IN THE MISSISSIPPI VALLEY.—[The following circular, which has been sent us for publication, is self-explanatory, but it may be well to add that several of Mr. Cook's reports for 1882 have already appeared in recent numbers of "Forest and Stream." His undertaking deserves the cordial support of all who are in a position to render him aid.—Eds.]

Last year a number of ornithologists were induced to unite with me in conducting a series of observations on the migration of birds in the Mississippi Valley. The results were so gratifying that the intention is to undertake the same again this winter and next year. As the value of the observations is greatly increased by making the stations more numerous, it is hoped that as many as possible may join in the work. The general plan will be during the winter to note carefully the habits and food of each species, and with the first approach of spring to note the date when each of the winter visitors begins to leave for the north; when the bulk of each species passes, and when the last one is seen. Of those species that pass through to nest further north, note the arrival of the first one and of the bulk; the departure of the bulk and of the last one. Of those that remain to breed, note first arrivals; arrival of bulk; breaking up of flocks into pairs; nesting; eggs; young; and any and all other interesting items concerning habits, actions, food, etc., which may come within notice.

Any one in the Mississippi Valley who is willing to aid in the work will confer a favor by dropping me a postal card. It is not necessary that one be an expert ornithologist; all can record the movements of our common and well-known birds, a full knowledge of whose movements will serve as the best foundation for the study of the rarer species. To such as wish to help, a full statement of methods and aims will be sent.—W. W. COOKE, *Jefferson, Wisconsin.*



# BULLETIN

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### THE VERNAL MIGRATION OF WARBLERS ON WOLF RIVER, ONTARIO COUNTY, WISCONSIN.

BY F. L. GRUNDTVIG.

Near the village of Shiocton, the Shioc River joins the Wolf, after running parallel with it for about a mile. Between, and immediately bordering these streams, is a tract of lowland, the most of which is annually overflowed during the spring freshets, the water at times rising to a height of over nine feet above the ordinary level. This lowland appears like an oasis in a desert, covered, as it is, with a rich, vigorous growth of hardwood timber, and bordered on both sides by waste swamps extending in each direction for many miles. The timber covering this tract consists principally of soft maple intermingled with many ash, elm, oak and willow trees.

The Warblers, upon their first arrival, preferred the willows and smaller trees to the higher ones; but upon the leafing out of the maples and until the close of the season, the entire strip of hardwood timber lying between the two streams afforded them a congenial resort. After first resting in a row of old willows, the vast throngs of these birds would enter this piece of timber, at the junction of these streams, working leisurely northward until thoroughly dispersed among the higher tree-tops. Only a few went east of the Shioc, whereas many crossed the Wolf, working westward through a low growth of shrubs and bushes

growing along the banks of some ponds and old river courses. My morning and afternoon excursions commenced regularly May 3, and extended down the Shioc, up the Wolf and then westward, through the low shrubs and bushes, continually crossing and recrossing this inner strip of land. Between May 3 and 15 my observations were the most important and exact, for after that date many Warblers, concealed by the thick foliage, must have escaped my notice. Here stormy days frequently favored me, as the Warblers, during high winds, were generally noticed in low bushes, on "wind-falls," old logs, and on the ground. At such times they would often crowd together on banks, facing the wind, possibly anxious to cross, but hardly daring to attempt it. During the first part of May the water increased rapidly in height, until I could with ease row everywhere throughout the timber, and as my presence in a boat seldom alarmed them, I was enabled to follow closely the various flocks as they passed from one tree to another on their journey northward.

Previous to April 30 *Dendræca coronata* was the only Warbler I noticed. On the 30th, however, a single *Helminthophila celata* was taken, and the next day, when the wind, after having been northerly for a long while, shifted to the west, several specimens of *Mniotilta varia* and *Dendræca palmarum* arrived. May 2 the wind changed to the south and a few *Helminthophila celata* and *Mniotilta varia* were found intermingled with some of the flocks of *Dendræca coronata*. May 3, at about sunrise, I took a single specimen of *Dendræca pinus*; possibly I overlooked it the day before. About this time a gentle rain commenced falling, which continued most of the day. Towards evening thousands of Warblers began to arrive, but owing to the rapidly increasing darkness I was only able to partially examine them. Among the new arrivals I found *Parula americana*, *Dendræca pennsylvanica*, *blackburniæ*, *maculosa*, *æstiva*, and *Setophaga ruticilla*. May 4 *Helminthophila ruficapilla*, *Dendræca virens*, and a single *Protonotaria citrea* were noticed.

On the 5th this migration seemed to be somewhat checked by a violent north wind, but by the 8th, after a whole night of rain, the wind quieted down, and the trees and bushes were once more literally alive with Warblers, so numerous, in fact, as to be apparently all united into one immense flock. *Dendræca tigrina* and *cærulescens* were the only new species observed. A cold,

northerly wind again rising, appeared to partially check this vast throng; but May 10, after another hard rain, I noticed them again moving slowly northward. The new species observed during this flight were *Myiodioctes canadensis*, *Dendræca striata*, and *Geothlypis trichas*. The wind once more shifted to the south, and on the 18th I noticed a few new flocks, among which were some *Dendræca castanea*. May 21 was the only day after the 15th when the number of flocks exceeded those previously observed. The night of the 20th was exceedingly cold, freezing hard in many places; in the morning, a very strong south wind was blowing, and Warblers in innumerable flocks began arriving. *Helminthophila peregrina*, previously seen but once (May 19), now arrived in large numbers. This immense flight soon ceased, and by May 26 only a few single Warblers were noticed.

The number of Warblers that migrated over this route was simply astounding. Some of the more uncommon eastern species appeared here in large numbers. I found at the least estimate several hundred of *Helminthophila celata*, and to say I observed several thousand of *Dendræca tigrina* would not be overstating it. This passage of the Warblers was really the most interesting of the kind I have ever witnessed. No bird migrations in Europe can be compared with it. The many pleasant hours spent in my boat, studying these graceful creatures, manifold both in species and beauty, will long be cherished among the many recollections of my sojourn in America.

The following is my annotated list of all the Warblers observed, omitting the genus *Siurus*, members of which were never noticed in company with the other species.

**Mniotilta varia** (L.) V. May 1 two males were taken, not in flocks with other Warblers, but east of the Wolf River. Afterwards I found it usually associated with other Warblers, Kinglets or Titmice, but five were the most I ever counted in any one flock. A few remained to breed. The first female was taken May 10.

**Parula americana** (L.) Bp. May 3 two females were taken. The next morning a few others of both sexes appeared in the other flocks, no more than three being noticed together; but in the afternoon they were quite numerous. May 5 I noticed these Warblers in small flocks by themselves, but during the next few days they were rather scarce. Between the 12th and the

17th they were again quite numerous, but the very next day none could be found. After the 18th only a few were noticed. June 23 I found a nest of this species containing eggs.

**Protonotaria citrea** (Gm.) Bd. May 4th I found among a flock of Warblers that were flitting about in some low bushes, a handsome male of this species, now in the collection of S. W. Willard, West De Pere, Wisc. It arrived in company with *D. coronata* and *D. blackburniae*.

**Helminthophila chrysoptera** (L.) Bd. Two males of this species were taken May 15th and one on the 18th. The next two days it appeared singly in the different flocks, but the 21st both sexes arrived in quite large numbers, only exceeded by *Dendroica striata*, *H. peregrina*, and *D. maculosa*. It apparently nested in thickets in a low, wet place, but continued search failed to reveal its nest.

**Helminthophila ruficapilla** (Wils.) Bd. I first discovered this Warbler May 3, when five were noticed in some low shrubs. The 5th I found it intermingled with many of the other flocks, and the 6th it rather outnumbered its bush associates, but from the 6th to the 9th only a few were seen. The 10th it was quite numerous everywhere, and increased in number until the 12th, when it was only exceeded by *Setophaga ruticilla*. After this date it was rather scarce along the rivers, but still remained quite numerous in the swamps, where it apparently nested, although no traces of a nest could be discovered.

**Helminthophila celata** (Say) Bd. April 30 a female of this species was taken on a meadow east of Wolf River, in company with a single *D. coronata*. After May 1 I found both sexes quite common, still associating more or less with *D. coronata*. The last one was observed May 9th. Coues, in his "Key to North American Birds," describes this Warbler as "never ashy about the head," and also gives the size as being the same as that of *H. ruficapilla*. This, however, differs from my experience, as many of the specimens were *very* ashy about the head, while all of them were larger in all proportions than *H. ruficapilla*. From a large series of specimens of both species, I have carefully compiled the following measurements, giving both extremes in each case.

	Length.	Extent.	Wing.	Tail.
<i>H. celata</i> ,	5—4 $\frac{7}{8}$	7 $\frac{3}{4}$ —7 $\frac{3}{8}$	2 $\frac{1}{2}$ —2 $\frac{7}{16}$	2—1 $\frac{7}{8}$
<i>H. ruficapilla</i> ,	4 $\frac{5}{8}$ —4 $\frac{5}{16}$	7 $\frac{3}{8}$ —6 $\frac{1}{2}$	2 $\frac{1}{2}$ —2 $\frac{3}{8}$	1 $\frac{3}{4}$ —1 $\frac{5}{8}$

**Helminthophila peregrina** (Wils.) Cab. May 19 a single male was taken by S. W. Willard in a thicket east of Wolf River. The 21st both sexes were very numerous, ranking in numbers with *D. striata*. After this the number diminished somewhat, but the species was still quite common until the 27th, when it suddenly disappeared.

**Dendroeca aestiva** (Gm.) Bd. A single male was taken May 3. The 4th it was noticed intermingled with many flocks, and on the 5th it outnumbered all its associates. May 14 they were everywhere unusually abundant, exceeded in numbers only by *S. ruticilla* and *D. pennsylvanica*. They breed here abundantly. The first egg was found June 2. May 12 I shot a male that had the crown curiously striped with several rich orange-brown marks.

**Dendroeca virens** (Gm.) Bd. Several males were noticed May 4. After that date and until the 22nd it was occasionally seen in the other flocks, May 8 being the only day it was quite common. The 7th, 9th, and from the 13th to the 18th, none were noticed.

**Dendroeca caerulescens** (L.) Bd. May 8 a few males were seen; the numbers then gradually increased until the 11th, when the first females were noticed. May 12 none were observed, but after that date it was occasionally seen until the 23rd. May 31 a single male was noticed.

**Dendroeca coronata** (L.) Gr. The first specimen was taken April 5; single ones were also taken the 10th, 12th, 14th and 18th. April 21 the first flock arrived. From this date the number increased rapidly. April 30 other Warblers were found intermingled throughout the flocks, and by May 8 the number was quite insignificant; from the 9th to the 20th only a few single ones were observed. Undoubtedly this species was the most abundant of all the Warblers.

**Dendroeca Blackburniæ** (Gm.) Bd. The arrival of this Warbler was indeed very singular. The first one, a male, was noticed May 3. The 4th, 5th, and 6th a few were seen, but the 7th none were to be found; the 8th, however, enough of them had arrived to far outnumber the other Warblers then present, but the very next day not one was seen. Excepting the 16th and 17th, it was noticed each day from the 9th until the 23rd, when it disappeared.

**Dendroeca striata** (*Forst.*) *Bd.* May 10 a few males arrived, but no others were noticed until the 18th. The 19th and 20th a few were seen; the 21st they became quite numerous, and from the 22nd to the 24th they outnumbered the other species. On the 25th, however, the numbers were exceeded by those of *D. castanea*, but the flocks continued quite numerous until after the 27th, after which date only a single straggler was noticed, on June 5. The first female arrived May 21.

**Dendroeca castanea** (*Wils.*) *Bd.* May 18 five males of this species appeared in a large flock of other Warblers. The number gradually increased, and May 23 it was only exceeded by *D. striata*. May 25 it outnumbered them all, but the day following none were seen. The females first arrived May 25.

**Dendroeca pennsylvanica** (*L.*) *Bd.* A small flock arrived May 3, but none were noticed again until May 8, when several others were seen. The number gradually increased, and May 12 it was only exceeded by *Setophaga ruticilla*. May 14 it outnumbered them all; from this date, however, the flocks gradually decreased, although many remained to breed. The first egg was taken June 3.

**Dendroeca maculosa** (*Gm.*) *Bd.* May 3 a single male arrived. May 5 a few were found in the other flocks, but none were noticed again until the 9th. A few were seen during the following days, but from the 13th to the 17th none were noticed. On the 18th, however, this Warbler rather outnumbered the other species then present, and continued very numerous until May 24. The last were noticed May 25. Two males, shot May 5, had the black of the head not continuous with that of the back but plainly interrupted with clear ash.

**Dendroeca tigrina** (*Gm.*) *Bd.* May 8 quite a number of males arrived, scattered through the different flocks, and the next day large flocks arrived, in numbers almost equaling *Setophaga ruticilla*. They remained quite numerous, and on May 12 it was only outnumbered by *S. ruticilla*, *D. pennsylvanica*, and *H. ruficapilla*. May 13, however, only a few were seen, but May 14 large numbers again appeared; afterwards only a few were noticed, mostly females. May 17 and 18 none were seen, and for several days only one or two were noticed, the last one, May 25. The first female was seen May 9th. Several males taken had spots on four pairs of tail feathers.

**Dendroeca palmarum** (Gm.) Bd. Perhaps this Warbler ought not to be included, as it was seldom seen in company with the rest, but generally noticed in the grass and in low bushes instead of in the trees. The first was seen May 1, but it was not very common until the 8th; the greatest number were noticed between this date and the 12th.

**Dendroeca pinus** (Bartr.) Bd. May 31 I shot from out of a flock of *D. coronata* the first specimen of this Warbler, a female. Afterwards I noticed them in many flocks but seldom found a flock composed entirely of this species, four or five being the most I have ever seen together. After May 6 it was very scarce, the last one appearing May 12, which was indeed a very peculiar specimen. It proved to be a female, with only the upper tail coverts olivaceous, the back and the head being entirely gray, there was no trace of a superciliary line, and below it was sordid whitish. Size,  $4\frac{1}{6}$ ,  $2\frac{1}{6}$ , and 2. In fact, all of the specimens of this Warbler I examined were smaller than the measurements given in the "Key."

	Length.	Wing.	Tail.
Males . . . . .	$5\frac{1}{4}$ — $5\frac{1}{8}$	$2\frac{7}{8}$ — $2\frac{3}{4}$	$2\frac{3}{16}$ —2
Females . . . . .	$5$ — $4\frac{1}{6}$	$2\frac{1}{6}$ — $2\frac{1}{2}$	$2$ — $1\frac{7}{8}$

A peculiar male specimen had three pairs of tail blotches.

**Geothlypis trichas** (L.) Cab. This Warbler was always noticed over wet, swampy places, it preferring the low bushes and shrubs to the higher trees. The first was seen May 10, but they were not very numerous until the 18th, when both sexes appeared. They breed everywhere throughout the swamps.

**Myiodiotes pusillus** (Wils.) Bp. This Warbler was very rare in this section, only a few males being found. Two on the 12th were the first observed; the 14th I noticed one, the 18th, two, the 22nd, one, and the 23rd, four, but not together; the 24th, 25th, and 28th one was noticed each day. Always found in bushes in low, wet places.

**Myiodiotes canadensis** (L.) Aud. The first was seen May 10, two on the 11th and two on the 18th. The first was seen May 10, two on the 11th and two on the 18th. The 19th, however, it was very numerous, exceeded only by *D. maculosa*. The 20th it easily outnumbered the other species and remained quite numerous until the 22nd. The last two were observed May 31.

**Setophaga ruticilla** (L.) Sw. May 3 I noticed a single female; the 5th, a pair; the 8th, three males in different flocks, and the 9th I found them very numerous. After this date and until the 15th, they rather outnumbered the other species, when the number rapidly diminished. I found it breeding here very abundantly, the first egg being taken the 3rd of June.

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## THE COMMON NAMES OF AMERICAN BIRDS.

BY ERNEST INGERSOLL.

The Thrush family — here regarded in its broadest sense, for the sake of convenience — does not present a wide range of vernacular synonyms except in respect to two or three species, nor are these difficult of explanation.

The word *Thrush* is very old, appearing in substantially the same shape — the *u* sound having superseded an older *y* or *ö* — in the Icelandic and Anglo-Saxon languages. I believe that the origin of the word was a reference to the throat, or in other words to the singing powers of this family, whose voice is probably their most notable trait; and this view is strengthened when it is remembered that the old German word *drozzd* coming from the same root as our English *throat* gives *drossel* in modern German as the word for “throat,” “throttle,” and also for “thrush.” Under *Thrasher* I shall adduce a further argument. From the earliest times, then, the Thrushes have been considered preëminently the song-birds of the world.

Taking up the list in regular order, the first to present itself is *Turdus mustelinus*. Its common names are: *Wood Thrush*, *Wood Robin*, *Swamp Robin*, *Swamp Angel* (Adirondacks), *Bogtrot* (South Carolina), *Alondra del Monte* (Mexico). All of these evidently refer to its habitual forest-resort and its Thrush- or Robin-like (for frequently these words are confused) character. The terms *Song Thrush* and *Grive des Bois Flûte* (Canada) point to the striking music of this bird, the French literally meaning “the flute-voiced Thrush of the woods.” Referring to



the color of the plumage are the book-names *Tawny Thrush* (Pennant, Latham) and *Merle tanné* (D'Orbigny). As for *Grasset* (Texas), I cannot explain it.

For *Turdus fuscescens*, size and color are indicated in *Tawny Thrush*, *Little Thrush* (Latham), and *Merle grivette* (Canada — literally "Little-Thrush-Blackbird"); *Wilson's Thrush* discloses its first adequate biographer; *Veery* (New England) and *Yorrick* (Thoreau's Writings) refer to its pleasing note, which they copy.

The first name of *Turdus aliciae*, *Alice's Thrush*, is complimentary to Miss Alice Kennicott; the second, Gray-cheeked, is, of course, a color-mark.

*Turdus ustulatus* gives us *Oregon Thrush* (locality), *Willow Thrush* (California — habitual haunt), and *Russet-backed Thrush* (color). The variety *swainsoni* is usually called simply *Swainson's Thrush*, but it is also the *Olive-backed*, *Little* or *Brown Thrush*, or *Swamp Robin*.

Skipping the western types, our eastern *Turdus "pallasi"* comes next. Nearly all the names of this shy and solitary bird refer to its habit of haunting for the most part the undergrowth of secluded and damp woods. Its small size and distinguishingly reddish tail supply the rest. Following is the list: *Hermit* or *Solitary Thrush*; *Grive* or *Merle solitaire* (Canada); *Ground Swamp Robin* (Maine); *Little Swamp Robin* and *Rufous-tailed Thrush*.

This brings me to *Merula migratoria*, the *Robin*. The word robin is an ancient pet-name for Robert, which is of German descent. That it should have been given to the household favorite of Great Britain is not surprising; in fact some similar personal pet name has been given to that Warbler (*Erythacus rubecula*) all over Europe, and such analogues as "Jenny Wren" and "Jim" (for the Sparrow) are common. The earliest emigrants to America, finding a red-breasted bird inclined to be familiar with them, and eager to be reminded of the home for which they longed regretfully, gladly called it "Robin," not aware, or regardless, of the fact that the old one was a Warbler and the new friend a Thrush. This fact was speedily recognized, but the old name clung, and hence we hear *Robin Redbreast*, *American Robin*, and *Robin Thrush* as surviving appellations throughout the northern half of the continent. In the Southern

States, however, the bird's resemblance to the *Turdus pilaris* of Europe came strongly to the mind of the early writers. Hence one finds in old books like those of Brickell, Lawson, Catesby and so on, that it is most often spoken of as the *Field-fair*, *Field-fear*, or *Fieldfare*; of these the last is the proper spelling, and means one who travels or *fares* in the fields; the name is yet heard occasionally.

More distinct recognition of the bird as a *Thrush*, together with its two striking characteristics — red breast and migratory conduct — gives us: *Red-breasted Thrush*, *Merle\* ou Rouge gorge du Canada*, *Migratory Thrush*, *Merle erratique*, *Robin Thrush*, *Grive de Canada*, *Omschel* (Pennsylvania German — a corruption of *Amsel*, "Thrush").

I have been able to collect many Indian names (untranslated) for this bird, the Ojibway and Navajo words seeming onomatopœic: *Opeéchee* or *Péchce* (Ojibway), *Kailee che* (Navajo — note resemblance to preceding!), *Ispokwah* (Creek), *Jiskoko* (Iroquois), *Chauncobshah* (Assiniboine). The Ojibways had very pretty legends connected with the Robin, making it a bearer of tidings from supernal sources, and so forth.

Nothing more calls for special mention until we come to *Mimus polyglottus*. Like its Latin name in both parts, its English and French appellations chiefly refer to its remarkable powers of mimicry, and date far back, for this was one of the most striking of our birds to the new comers. Thus, in the "Collections of the American Antiquarian Society," IV, 24: "*Artamockes*, a bird that imitateth and useth the sounds and tones of almost all birds in the Countrie." We have *Mimic Thrush*, *Mockbird*, *Mockingbird*, *Moquer* or *La Merle moquer*, and *English Mockingbird* (to distinguish it from the "French" Mockingbirds of the Southern States — chiefly *Harporhynchus rufus*). Its sweetness of voice apart from mimicry, and its habit of singing frequently after sunset or in the moonlight, caused it to be called in the English West Indies, *Nightingale*, and in the other islands *Rosignol*. This last word is only a modification of Rosignor, or Lord of the Rose — the Spanish name of the Nightingale; it is probably of Moorish descent, and has been applied to other American birds as well as this. The Mexican (west coast) name —, *Sinsonte*, is also in allusion to the bird's voice.

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\* *Merle*, "Blackbird," is the French form of the Latin generic word *Merula*.

The spotted plumage is expressed in the German name *Spottvogel* or *Shpotfogel* as it is spelled in Pennsylvania. Indian names at my disposal are two: *Yuswahaya* (Florida Seminoles); and *Tshitshikniin* (Delawares).

*Galeoscoptes carolinensis*, *Cat-bird*, was a name early and spontaneously decided upon for this Thrush, whose *mewing* note at once suggests it. *Cat Flycatcher* (Pennant), *Merle Catbird*, *Chat* (Canada), *Katsafogel* (Penna. Germ.) and *Zorzal gato* (Cuban), all ring changes upon this point; probably Bartram's name *Chicken-bird* belongs to the same category. Color is designated in *Blackbird* (Bermudas—where also it is properly called *Mockingbird*), and in D'Orbigny's French name *Merle à derriere roux*,—the Red vented Blackbird.

The *Harporhynchus rufus* is a bird of many names suggested by more than one striking point in its character. Its strong color and mimicking voice gives us *Fox-coloured Thrush* (Bartram and others); *Ferruginous Thrush* (Wilson) or *Ferruginous Mockingbird* (Audubon); *Rufous-tailed Thrush*, *Grive rouge* (Canada), *Sandy Mockingbird* (Dist. of Col.), *Brown* or *Red Thrush*, *Red Mavis* (recalling an English songbird), and *Brown Thrasher*.

The last of these (*Thrasher*) is perhaps the most often heard of all its names in the Northern and Middle States. The word is undoubtedly another derivative from the root of *thrush* just as the Swedish *trast* is; or you may say that it came from the root of the verb *to thresh* (in Anglo-Saxon *therscan*), the original meaning of which was to make a rattling noise,—one of the most prominent of the utterances of this garrulous bird.

Its imitative powers have given it several names, such as two or three quoted above; *American Mockingbird* (Wisconsin); *French Mockingbird* (Southern States—distinguishing from *M. polyglottus*); *Carolina Mockingbird*, and so on. In the name *Corn-planter* (New Jersey and Massachusetts) we have a recognition of the time of its appearance in the spring, when the maize-seed is being put into the ground. "While you are planting your seed," says Thoreau, "he cries—'Drop it, drop it—cover it up, cover it up—pull it up, pull it up, pull it up.'"

*CINCLUS MEXICANUS*. The notable habits and waterside haunts of *Cinclus mexicanus*, together with its affinity to the Thrushes, have given it the name "*Water Ouzel*," for *ouzel* (or

*ousel*) is an old English word for Thrush, allied to the German *amsel*. Many European names exist, and we have imported one, *Dipper*; this simply means "diver," coming directly from the same root. Its small size and lively manner gives it the names *Water Wren* in Colorado, and (adding its brilliant song) *Water Oriole* on the Northwest Coast. Among the miners of Nevada it figures as *Water Turkey*, a term having as much sense as that of "Winter Geese" given by the Nahant people to the Snow Bunting.

The next names worthy of notice are those of the *Paridæ*. *Tit* originally signified something small; by itself it stood as a name of a small bird. But our word is confounded with the Angle-Saxon *māse*, the name of several sorts of little birds in that language. It has no connection with "mouse," which comes from a different root; therefore its plural should not be titmice, which involves this error, but titmouses. The root of *māse* signifies "to diminish," and hence the latter part of the name, as well as the former, refers to the small size of the birds—about the smallest, indeed, with which northern nations are popularly acquainted. *Tomtit* is an affectionate nickname suggested by alliteration, like Tom Thumb.

The local American names of our Titmouses call for short mention. *Lophophanes bicolor* is the *Tufted* or *Crested Tit* or *Titmouse*, for obvious reasons. Thomas Nuttall designated it *Peto*—I suppose after its note; and Mr. E. A. Small writes me that in Western Maryland it is called *Peter-bird*; also *Storm-bird* and *Spring-bird*, explaining that "its notes are generally heard in damp weather in the spring and late winter." No explanation is required for the word *Chickadee* belonging to several species of *Parus*, for anyone who has ever heard its

—"Saucy note

Out of sound heart and merry throat."

An allied species of the West, *Auriparus flaviceps*, is known as the *Yellow-headed Titmouse* (or in Mexican *Paro amarillo*) and *Verdin*, meaning "greenlet." In Texas its yellow-daubed head has won it the name *Fat-eater*; while the Mexicans there seek to imitate its voice in *Pitachoche*.

This brings me to the *Sittidæ* or *Nuthatches*—birds that "hack" or "cut" nuts, perpetuating an error so far as this family.

is concerned.\* In *Tomtit* (Ohio Valley) and *Sapsucker* (Maryland) for these birds, other errors are indicated. Buffon's *Torchepot* ("pot-cleaner") perhaps alludes to the smutty black of the face. *Chipinenec* is a good name I have heard in Southern Massachusetts, describing its well-known note very accurately.

Skipping such terms as *Brown Creeper*, *Oven-bird*, and others readily understood, I come to the varied tribe of Wrens, about which in the Old World so much of personal affection and legendary, not to say superstitious, interest gathers. *Wren* derives from an ancient root *wrin*, whence, we are told, came Anglo-Saxon words meaning to neigh (as a horse), squeal (as a pig) or chirp (as a sparrow). But the neighing horse and squealing pig of which these words were always used were uncastrated animals; and the literal meaning of *wrenne* in the Anglo-Saxon was the "little lascivious bird." Few words have suffered or admitted of less change than this during all the centuries of vicissitude through which it has passed. None of the names of our representatives of this family require special notice; it may be mentioned, however, that *Telmatodytes palustris* is *Tomtit* in South Carolina and *Reed Warbler* in Rhode Island.

The Frenchmen in Louisiana in the early days gave to their familiar Wren (probably the *Thryothorus ludovicianus*) the name *Roitelet* or "Little King." This was a direct importation from Europe, and perpetuated a bit of folk-lore, which tells us that the Wren is the superior of the Eagle, and hence King of the birds, but a diminutive King, — hence Kinglet or *Roitelet*. This supremacy was attained by the trial of the birds, in congress assembled, as to which had the greatest powers of flight. The Eagle soaring above all the rest, thought himself *facile princeps*, when an impudent little beggar of a Wren that had slyly perched

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\* Though it is true enough that it is an "error" so far as the general woodland habits of the *Sittidæ* in the United States are concerned, yet I know of opposing instances. For example: My neighbor in New Haven this winter has been accustomed to feed a colony of gray squirrels by placing nuts of various sorts on his window-ledge, whither they go after them. The Nuthatches discovered, and two or three came regularly all winter, feeding upon the broken nuts and often flying away with large fragments in their beaks. They would frequently place a nut in a corner of the window-frame, where it would rest firmly, and then hammer at it with their pickax-beaks most sedulously, breaking the shells of the lighter sorts, and crushing the inner septa of the heavy kinds like hickory nuts. They did not seek worms, but fed greedily upon the substance of the nut-kernel.

upon the Eagle's broad back, rose gayly over his head, repeating the maneuver as often as the baffled "King" attempted to get above him. Ever afterward the Eagle was properly respectful in the presence of the mite of a Wren that had outwitted his majesty. Many forms of this myth appear, and sometimes the statements are given as facts. Thus it is hard to tell whether or not DuPratz believes the story he tells in his "History" to account for the Kingship of Le Roitelet in Louisiana. In America we do not regard the Wren with special kindness; but in Great Britain, it is scarcely ever spoken of without some gentle, loving epithet; and the word "poor," "little," "tiny," or "dear" is constantly joined to the prefix Jenny, Kitty, Titty (*cf. antè Tit*), Jintie, or Chitty when naming it.

In *Titlark* (*Anthus ludovicianus*) we again have the prefix "small." *Lark* is a condensation of two ancient words in Anglo Saxon (*læw*, "craft," and *werca*, "a worker") which meant a worker of guile; and the etymologists tell us "the name points to some superstition which regarded the bird as of ill omen." In the Scotch form *Lavrock* or *Laverock* a near resemblance to the old Icelandic *læviriki* (meaning the same as above) is to be seen. As for *Pipit* or *Pipit Lark*, common terms, the word is derived from the same root as the verb *to peep* (like a young bird's cry) and hence a word describing its somewhat feeble chirp. In my long list of local American names for this species occur the following: *Titlark*, *Prairie Titlark*, *Lark*, *Skylark* (Dist. of Col.), *Louisiana Lark* (and many other old book-names); *Brown Lark*, *Red Lark*; *Wagtail*, *American Pipit*, *Alouette Pipé*, etc., etc.

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## DESCRIPTION OF A HYBRID SPARROW (*ZONOTRICHIA ALBICOLLIS* + *JUNCO HIEMALIS*).

BY CHARLES H. TOWNSEND.

On December 12, 1882, Mr. William L. Baily shot the bird here described near Haverford College, Montgomery County, Pa. Mr. Baily suspected it to be a cross between the White-throated Sparrow (*Z. albicollis*) and the Snowbird (*J. hiema-*

lis), and recently left it with me for further examination. Having compared it with specimens of these species I fully agree with him as to its hybrid nature, since it bears the prominent characters of each bird. The specimen (a male) was shot in company with the above named species, both of which are quite common here this winter.

I indorse the views of Mr. William Brewster, in regard to *Helminthophaga leucobronchialis* and *H. lawrencei*, and his explanation of several obscure species of North American birds on the grounds of hybridity (this Bulletin, Vol. VI, pp. 218-225). Hybridity is by no means of frequent occurrence among our native Passeres, and a case of it between different *genera* of the *Fringillidæ* is of more than passing interest, but the hybrid does not warrant a special name, as some ornithologists have thought.

*Description:* Intermediate in size between *Z. albicollis* and *Ŷ. hiemalis*. Bill, nearly the size of that of *Z. albicollis*, but colored like that of *hiemalis*. Throat as in *albicollis*, breast and belly as in *hiemalis*. Tail of ten feathers, outer pair white, with the basal third dark; second pair with a small white spot on inner vane; other tail feathers dark, pale-edged above. Upper plumage mainly like that of *Z. albicollis*, but suffused with the slaty color of *Ŷ. hiemalis*; white spot from nostrils to eyes. Wing-coverts white-tipped, as in *Z. albicollis*, and edge of wing faintly yellowish. Length about 7.50; wing and tail, 3. Male.

[Through the kindness of Mr. Townsend I have been able to examine the hybrid above described, which combines in nearly equal degree the characters of *Junco hiemalis* and *Zonotrichia albicollis*. The black bands on each side of the crown are narrower and less distinct than in the latter and the superciliary line is represented merely by a white spot above the lores. There is a faint maxillary stripe. The black streaks of the interscapular region are much narrower than in *Z. albicollis*, and the rufous edgings of the feathers are suffused with slate; there is also less rufous on the wings, and the rump and upper tail-coverts are also more olivaceous, and the tail is darker.

This example, taken in connection with the hybrid Swallow described sometime since by Mr. Trotter in this Bulletin (Vol. III, pp. 135, 136, July, 1878), is of the highest interest, as intimated by Mr. Townsend, as throwing light on certain obscure Audubonian species known thus far only from the single examples on which the species were based, and makes the second known case of hybridity between species of quite distinct genera among our Oscine birds. Doubtless the *Helminthophaga cincinnatiensis*

Langd, believed by Mr. Ridgway (see this Bulletin, Vol. V, p. 237) to be a hybrid between *Helminthophila pinus* and *Oporornis formosa*, may be counted as a third example of like character, to say nothing of the several probable cases cited by Mr. Brewster in the paper above referred to by Mr. Townsend.—J. A. ALLEN.]

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## NOTE ON EXCEPTIONS TO THE LAW OF INCREASE IN SIZE NORTHWARD AMONG NORTH AMERICAN BIRDS.

BY J. A. ALLEN.

The law of increase in size northward among North American birds and mammals is so much the rule that the exceptions to it are conspicuous from their rarity. In considering some years since the few strongly marked examples among mammals of the converse of this law I was led to formulate the following propositions:

“(1) *The maximum physical development of the individual is attained where the conditions of environment are most favorable to the life of the species.* Species being primarily limited in their distribution by climatic conditions, their representatives living at or near either of their respective latitudinal boundaries are more or less unfavorably affected by the influences that finally limit the range of the species. . . .

“(2) *The largest species of a group (genus, sub-family, or family, as the case may be) are found where the group to which they severally belong reaches its highest development, or where it has what may be termed its centre of distribution.* In other words, species of a given group attain their maximum size where the conditions of existence for the group in question are the most favorable, just as the largest representatives of a species are found where the conditions are most favorable for the existence of the species.

“(3) *The most ‘typical’ or most generalized representatives of a group are found also near its centre of distribution, outlying forms being generally more or less ‘aberrant’ or specialized. . . .*”\*

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\* “Geographical Variation among North American Mammals, especially in respect to size.” Bull. Geol. and Geogr. Surv. Territories, Vol. II, No. 4, July, 1876.



The various families of North American Mammals were reviewed in illustration of these propositions, which they seemed to abundantly support. The only species showing a marked increase in size southward were members of the genera *Felis*, *Procyon*, and *Sciurus*. The first- and last-named have their centre of development and largest species in Southern Mexico and southward, while *Procyon* belongs, with the exception of a single species, to a family wholly tropical.

As birds, with exceedingly few exceptions, are migratory at the far North, and are thus able to escape the wintry severity of the Arctic and Subarctic regions, they are less likely to present the double decadence in size implied in the first proposition above-quoted, and really shown in some mammals. Yet the cases of decrease in size northward among the *Anatidæ* referred to by Mr. Ridgway in the last number of the Bulletin (Vol. VIII, p. 62) may fall under this head or may be viewed as only coincidences.\* The few marked cases among North American birds of increase in size southward seem to occur among certain genera of Oscines which are either for the most part tropical or belong to tropical groups. Perhaps the most striking case is that of *Catherpes mexicanus*, with its two small northern races, *conspersus* and *punctulatus*. Again *Thryothorus ludovicianus* has a large southern race (*miamensis*) in Florida. The genus *Thryothorus* is mainly tropical in its distribution, and belongs, like *Catherpes*, to a subfamily chiefly represented in the American tropics.

The yellow-throated, black-masked section of the genus *Geothlypis*, a group also mainly tropical, affords several illustrations in point. *G. trichas*, the only species of the section having a wide range in North America, is the smallest of the group, with a large race in Mexico and another large race in the Bahamas. *G. poliocephala* is represented by a small race in Mexico and a larger one in Central America. *G. æquinoctialis* is represented by a large race in equatorial America and a smaller one in Brazil.

In *Pyranga*, the only North American genus of a tropical American family, *P. æstiva* of the United States is represented by a larger race (*cooperi*) in Mexico. *P. saira*, of equatorial

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\* So far as the distribution and breeding ranges of *Fulix marila* and *F. affinis* are known to me they seem to hardly fall into the category here cited.

America, has a smaller northern race in Central America. *P. hepatica* of Mexico has, according to Mr. Ridgway, a smaller southern race in Paraguay. In reference to this latter case, and to *Geothlypis poliocephala*, decrease in size southward south of the equator is equivalent of course to decrease in size northward north of the equator.

The instances of decrease in size southward in North American Oscines above-noticed—and they embrace all the marked ones that I now recall—seem to be explainable under and illustrations of the first proposition above cited. In general, North American birds belong either to northern or cosmopolitan types, with a few pertaining to distinctively tropical American groups which are represented with us by a few outlying members; and it is among these that we note the exceptional increase in size southward.

Geographical variation in size in birds has been hitherto discussed chiefly in reference to those of North America, but that the law of decrease in size southward also holds for the birds of Europe and Asia is indicated beyond question, but not at present perhaps equally demonstrable. That south of the equator there is, as there should be on general principles, an increase in size southward among conspecific forms is also susceptible of illustration, but it is beyond the province of this note to enter upon the subject here. Later there may be occasion to take up the matter in detail.

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## BIRDS OF THE LOWER URUGUAY.

BY WALTER B. BARROWS.

It was in the early days of July, 1879, that the writer entered the waters of La Plata and through the chilly mists which were driven before a stiff “pampero” beheld the great flocks of Gulls and Terns which, during the winter months, make these waters their home. Two months later he was set down in the darkness of early morning on the muddy shore of the west bank of the Rio Uruguay, about 200 miles north of Buenos Aires, at the old town of Concepcion del Uruguay. In the immediate vicinity of this

place most of the observations recorded here were made, and unless otherwise stated it will be understood that all notes refer to observations made at Concepcion.

The whole number of species taken here was rather less than two hundred, but allowance must be made for the fact that only a small part of the time spent here could be given to collecting, and that not unfrequently entire weeks passed without any opportunity occurring for so much as an hour's tramp outside the town.

During his entire stay here the writer was connected with the Colegio Nacional, and it so happened that the times of greatest activity at this institution usually coincided with those periods of increased activity among the birds — the vernal migrations and the breeding seasons.

Excursions were made, it is true, to many points from ten to thirty miles from the town, but these were not often possible, and observations in the main were confined to the country lying directly about the town.

Concepcion lies in about  $32\frac{1}{2}$  degrees south latitude, and the range of temperature is from  $100^{\circ}$  Fahr. in January and February (only observed on two or three occasions) to  $38^{\circ}$  or  $40^{\circ}$  in May and June. Yet heavy frosts frequently occur during these two latter months and April, while a change of wind to the north may, even in mid-winter, make the weather oppressively hot during the day.

The region about Concepcion shows considerable diversity of surface, but no hills, and no heavy woods of any extent. Rolling grass-land or prairie alternates with cultivated farm or sterile sand-waste where only the dwarf acacia and spiny cactus seem to thrive. Wherever a stream is struggling for existence a few trees and bushes may be found extending in mute sympathy their scanty foliage, and if we follow such a stream till it emerges into the flood-plain of the river we may find the remains of what were once goodly forests of swamp-loving trees — now decimated by the charcoal-burners in their efforts to meet the demands for fuel of a land practically without mineral coal and in large measure treeless.

By no means all this flood-plain is wooded, and while unmo-lested tracts of swamp forest still exist, they are yearly lessening in number and extent. And there are vast treeless marshes also where water-birds and mammals have things all their own way

unless an unusually dry season makes their abode convenient grazing ground for herds of cattle, or an unusually wet one brings all flesh into competition along the edge of hard ground, often several miles back from the river margin.

The river itself varies in width from half a mile in a few places to five times that distance in others, while in time of flood ("creciente") it oversteps all bounds and claims the whole valley from bluff to bluff.

Owing to the mildness of the winter comparatively few birds seemed to be really migratory at this place, and from the irregularity of the observations made during the spring, and the fact that only one entire spring was spent at Concepcion, the dates of arrival in most cases can be only approximately inferred.

The few brief visits which were made to large tracts of heavy woods showed that undoubtedly many other species than those actually obtained might have been found there at different seasons or under more favorable circumstances. This is certainly true with regard to birds of prey, several species of which were not met with at all outside of these tracts, though abundant there, while still others were not taken at all, though known to abound in other parts of the province. Another season in the same locality would doubtless yield many other species, yet probably not many which are *regularly* to be found in any considerable numbers were overlooked.

Late in January, 1881, the writer became one of a party delegated by the Argentine Government to make a provisional examination of the fauna and flora of the Pampean Sierras in the extreme southern parts of the province of Buenos Aires,—a region but imperfectly known, and at that time only recently vacated by hostile Indians. Although about ten weeks were spent in this work less than half was of any real value, owing to the lateness of the season, the imperfect organization of the party, etc. The party went by rail on January 25 from Buenos Aires to Azul—over 200 miles south-west; thence forward 250 miles by diligence to Bahia Blanca on the coast in latitude  $38\frac{1}{2}$  degrees south, this being the southernmost point reached. From this place the course was north 50 miles by saddle and wagon to the Sierra de la Ventana (Windowed Sierra) and then westward 75 or 100 miles along the base of these mountains and the Sierra de Curumalan to the military posts of Puan and Carhué, at which

last point we arrived early in April, returning thence directly to Azul and Buenos Aires.

During this trip about 800 miles of the pampas were hastily crossed and the largest part of the time passed among the desolate sierras and the hardly more fertile plains at their feet. Collections were made at all favorable points, but, the season being late summer and autumn, the birds taken were largely migrants and nearly all well-known species. Whatever of interest with regard to them was collected has been incorporated in the notes which follow.

1. **Turdus leucomelas** Vieill. ZORZAL (THRUSH) of the Entre-Rianos.—This bird abounds at Concepcion the year round, and was taken also at Buenos Aires. It was not observed either at Azul or any of the points further south. It is found in the gardens of the town as well as in the depths of the swampy woods, but never seen far from leafy cover of some kind, and does not appear at home on the ground. It is very unsuspicious and is frequently caged and becomes reconciled to its imprisonment, yet is not very musical. The nest is usually well hidden among the tops of bushes or masses of twining plants, never more than ten feet from the ground, and resembles in general the nest of our own Robin, but is smaller and contains no mud in its composition, so far as my observation goes. The eggs, commonly four, are splashed and dotted with several shades of brown on a dirty green ground. Sets were taken through October and November, and frequently the eggs of the Cowbird were found with them.

2. **Turdus rufiventris** Vieill. ZORZAL VIENTRE COLORADO (RED-BELLIED THRUSH).—Less abundant and more retiring than the preceding; seldom seen except in the woods. Resident through the year at Concepcion. In breeding habits precisely similar to the preceding, and the nest and eggs of the two species are generally indistinguishable, though the eggs of the present species would probably average a little larger.

3. **Mimus calandria** (Lafr. & d'Orb.). CALANDRIA.—Very abundant and well known, and resident at Concepcion through the year. Undoubtedly a fine singer, but its song, so far as my observation goes, is far inferior to that of our own Brown Thrush (*Harporhynchus rufus*), and cannot approach at all that of our Mocking Bird. I have never heard it sing for more than

a minute and a half or two minutes at a time, and even then the notes were disjointed.

The nest is very bulky, placed within five or six feet of the ground, and composed of sticks, roots, and grass. The eggs, three or four in number, are greenish white, with dots and splashes of brown, both colors varying widely in precise tint in different specimens. Eggs were taken from October 28 until January 15, but doubtless many are laid by the first or middle of October.

This is one of the few large birds regularly imposed upon by the Cowbird. In one case four of the latter's eggs were found in a nest with but two of the owner's.

This species was not met with south of Buenos Aires, unless a single bird was seen near the Sierra de Currumalan. Although this specimen was not taken, there is little doubt that it was *Mimus patagonicus*, which replaces *M. calandria* in Patagonia.

4. **Polioptila dumicola** (Vieill.).—An abundant bird at Concepcion among trees and bushes everywhere, many remaining through the entire year, though perhaps not as many were seen during the colder weather. The beautiful lichen-covered nests were frequently found during November; always in plain sight but very difficult to see, and most often betrayed by the birds themselves. They were rarely placed more than five or six feet from the ground,—oftener only three or four,—and almost invariably contained three eggs, which in color and markings were precisely like those of *P. cærulea*.

5. **Troglodytes platensis** Bp. TACUARA or TACUARITA;—probably so called from its fretting notes (*taques*).

Abundant everywhere—in the towns as well as in the gloomiest swamps and sandiest cactus patches, and equally abundant summer and winter. It nests, like its cousin *T. aëdon*, in any cavity which takes its fancy. Probably two broods are reared each season, as many were nesting early in October, and fresh eggs were taken as late as January 3, at which time I took a set of seven from the hollow of a decayed stub which overhung the river. In nest, eggs, and song, this bird so nearly resembles *T. aëdon* that anything more on these points is superfluous. From its sociable disposition (towards man at least) one is often surprised to find it in the most out-of-the-way places, as, for example, in the lonely gorges of the Sierra de la Ventana, where its rich song more than once gave me a pleasant surprise.

6. **Cistothorus platensis** (*Lath.*).—Only observed on one or two occasions in the half-flooded meadows which border the stream at Carhué.

7. **Anthus correndera** (*Vieill.*).—Found everywhere in open ground, singly or in pairs in summer, usually in loose flocks in winter. The great variations in color, length of hind claw, etc., have given rise to several named varieties and species, all now referred to this one species. The bird doubtless breeds throughout the whole country, but I was unable to find a single nest or gain any reliable information as to its breeding habits. Half a dozen different birds of about the same size and general color are commonly called by the same name—"Chingolo"—and this bird is rarely distinguished from the common *Zonotrichia*, even by the gauchos, who are usually very observant of all living things found on the pampas.

8. **Parula pitiaiyumi** (*Vieill.*).—These beautiful little birds, so similar to our own Blue Yellow-backed Warbler, were first noticed at Concepcion July 7, 1880, when a single female was taken. A few days later they became quite abundant and were occasionally seen afterward until about October 1, after which time I did not take any. They were quite partial to blossoming trees, especially willows, doubtless attracted by the abundance of insects there.

One specimen (No. 719) seemed to be abnormal in coloring, showing many white feathers in the forehead; and on skinning, the flesh was found thickly spotted with oval, white lumps about the size of the eggs of the common "blow-fly." These were most numerous toward the surface of the pectoral muscles, but occurred also deeply imbedded in their substance as well as in the muscles of wings and legs. It was not practicable to examine their structure with the microscope until the next day, when decomposition was so far advanced that little could be made out. In all probability, however, they were the encysted larvæ of some parasitic worm, though whether they had anything to do with the abnormal plumage is an open question.

Of the breeding habits of this species nothing was learned, nor was the bird met with at other points visited.

9. **Geothlypis velata** (*Vieill.*).—Abundant in low, bushy ground from early October until late in January, and doubtless breeds. On November 6, 1879, a gaucho brought me a set of

three small eggs taken from a nest of grass, etc., placed in a low bush. He gave a minute description of the bird, which he called "Jilguero," and which could have been no other than the present species. The name "Jilguero" is only properly used for the Goldfinch (*Chrysomitris magellanica*) but any small black and yellow bird would receive this name for lack of a better. The eggs, now before me, are white with a faint creamy tinge and spotted at the larger end with chestnut, the spots on one egg being small and of pretty uniform size, and on the other two coarser with some large blotches; they average .82 X .62 inch. The male has a pleasing song, much like a very subdued imitation of the warble of the Purple Finch (*Carpodacus purpureus*).

10. **Cyclorhis viridis** (*Vieill.*).—This bird was frequently met with at Concepcion during spring and summer, being most abundant in July, August and September, but many doubtless remain through the summer and breed, though no nests were found.

The bird's favorite haunts seem to be the tangled thickets and low woods which border the streams and render so many of the river islands almost or quite impenetrable. Here, walled in by netted masses of jasmine, sarsaparilla, and passion flowers, there was little fear of interruption, and the male was often heard pouring forth his strong, clear warble with an energy which always suggested a bird of twice his size.

11. **Progne chalybea** (*Gm.*). GOLONDRINA MAYOR (LARGER SWALLOW).—All the Swallows are known as "Golondrinas," and when it is desired to indicate a particular species an appropriate adjective is used.

The present species arrives at Concepcion from the north somewhat later than the smaller Swallows and is not so abundant, though its voice is usually to be heard at any hour of the day during the breeding season.

During October and November the nests are built,—usually in hollows beneath the eaves of houses and sheds. Of the eggs I know nothing.

On October 22, 1880, I spent nearly the whole afternoon in watching several hundreds of this species and *Progne tapera*, catching dragon-flies. A high, cold, south wind ("pampero") was blowing and the dragon-flies were massed by thousands on the leeward sides of the bushes near the top of a bluff. Benumbed



with the cold they only flew when hard pressed, and were then almost inevitably swept by the wind directly into the waiting mouths of the birds. Selecting a bush on which a peck or two of the insects were clinging, I would dislodge them by a sudden shake, and in an instant become the centre of a flock of voracious birds, which seemed to have lost all fear and were intent only on the helpless insects, which were snapped up often within a foot or two of my face.

The dragon-flies were of medium size, having a spread of perhaps  $2\frac{1}{2}$  to 3 inches. They did not cling to each other like bees or locusts but simply crowded as near as possible, clinging so thickly to twigs and leaves as to hide entirely the color of the foliage and transform green mimosas into shapeless masses of gray and brown.

12. **Progne tapera** (*Linn.*).—This species appeared in the spring at about the same time as the preceding—about the middle of September—and for some time I did not distinguish it from the female of that species.

In general habits the two species are quite similar, but the notes are somewhat different and the present species is more often found away from the houses than is the common Martin, nor does it, so far as I know, ever breed under the eaves of dwellings. Probably the greater number breed in natural hollows of trees, or in the abandoned nests of other birds. I once noticed several hovering about Woodpeckers' holes in a tall dead tree, and early in November, 1880, saw a female carry a feather into a deserted nest of the Oven Bird (*Furnarius rufus*), where I caught her in my hand as she was arranging the materials of a nearly finished nest.

13. **Progne elegans** *Baird.*—Specimens were taken at Bahía Blanca, where the birds were abundant, and they were frequently seen in the Sierra de la Ventana. While at Carhué and Puan—March 21 to April 9, 1881—none were seen, but the weather was so cold that doubtless they had then gone north. At Concepcion this species was never observed.

14. **Hirundo (Tachycineta) leucorrhoa** (*Vieill.*).—GOLONDRINA (SWALLOW).—By far the most abundant Swallow at all points visited. Arriving from the north early in July, it remains through the summer and does not leave until the following April. Abundant alike in the crowded streets of Buenos Aires and on the monotonous pampas, it is known everywhere by the name

Go'ondrina, and its appearance after the cold weather is hailed as one of the earliest signs of returning summer. Through October and November it breeds at Concepcion wherever it can find a suitable spot, placing its nest of grass, wool, and feathers in any safe cavity about a dwelling-house or shed, or not infrequently in the deserted nest of a *Furnarius* or *Anumbius*.

From a nest of the latter bird I took a set of this Swallow's eggs—five in number—on October 30, the parent birds hovering close about my head as I examined the nest. The eggs are pure white. During the mating season the male has a very pretty song not unlike that of the Eastern Bluebird, though not as long, and seldom delivered without interruption.

15. **Atticora cyanoleuca** (*Vieill.*).—This species was first seen at Concepcion September 4, 1880, when it was observed in considerable numbers, associated with the preceding species, from which it was easily distinguished by its smaller size and the absence of the white rump. For nearly six weeks it was observed here from time to time, but after October 20 it was not noted until at Azul it was found in large flocks January 27, 1881, seemingly ready to migrate northward. It was seen, however, at Bahia Blanca a few days later and then almost daily until March 28 at Puan, after which it was not again observed. Of its breeding habits I know nothing.

16. **Cotile ruficollis** (*Vieill.*).—Abundant at Concepcion through the summer, arriving from the north early in August. It is said to nest in holes in banks, and I once dug out several deserted Swallow's nests supposed to belong to this bird, though none were seen in the neighborhood. The nests were of straw and feathers at the ends of holes about two feet in depth, and in pretty hard earth which formed a bank eight or ten feet high beside a small stream. A bird of this species frequently visited an open and deep well just in front of my door. I repeatedly saw it descend into the well but could never see it come out, or find it within. Probably it hid itself between the stones of the wall where it was prospecting for a home which it failed to find.

17. **Stephanophorus leucocephalus** (*Vieill.*). **CARDINAL IMPERIAL**.—A more beautiful bird than this Tanager it would be difficult to find, at least on the Uruguay, and when, in one of those narrow passages between the islands where the trees lean toward each other and solid walls of green rise on either side your

boat, you see a pair of these blue beauties swaying on a slender bush and showing at each turn of the head the snowy crown with its little dash of garnet, while the whole picture lies mirrored in the quiet water, it requires a prompt choking of all poetic feeling to make sure of your bird. Otherwise the next instant may find you looking vacantly at the swaying twig and wondering where the birds—and your senses—are. Although shy and suspicious the birds are really plenty enough, and after you learn where to look for them you may find them in pairs at Concepcion any day in the year. Somewhere among these river-fringes the nest must be built, yet it was always sought in vain.

The male during the breeding season has a strong, sweet warble recalling that of the Pine Grosbeak, but at other times both sexes are very silent, giving only a faint, quick chirp of alarm as they disappear.

18. **Tanagra striata** (*Gm.*). NARANJERO (ORANGE BIRD).—This well known and widely distributed species is abundant at Concepcion through the year and many undoubtedly breed there, but I did not meet with the nest. When seen at a little distance and in motion this bird always reminded me of the Baltimore Oriole, to which, indeed, it bears no little resemblance both in color and action.

The name "Naranjero" comes from a popular belief that the bird feeds on ripe oranges, and is given to several different birds which frequent the orange trees more or less. I have never seen any evidence, however, of any of the fruit being eaten by them.

19. **Tanagra cyanoptera** *Vieill.* NARANJERO AZUL (BLUE ORANGE BIRD).—The least common of the Tanagers, but occasionally observed, both summer and winter. A female taken November 6 had evidently just finished incubating.

20. **Pyranga saira** (*Spix.*).—But little more abundant than the preceding, perhaps really not as plenty, but its red dress makes it much more conspicuous. It was only observed during the early spring, and no evidence of its ever breeding in the vicinity of Concepcion was obtained. The specimens observed were silent, sluggish, and not very wary.

21. **Saltator aurantirostris** *Vieill.* JUAN-CHIVIRRO (imitation of its note).—The voice of this bird is much better known than his form. It would be impossible for one to row along the woody shore of the Uruguay a hundred yards in spring-

time without hearing the hearty voice — more emphatic perhaps than beautiful — but you might often row on for miles without a single glimpse of the bird himself.

He stays all winter at Concepcion and doubtless breeds there during the summer, but the nest and eggs were not taken.

22. **Guiraca glaucocærulea** (*Lafr. & d' Orb.*). — Not uncommon during spring and summer, with habits and song much resembling those of our Indigo Bird, which it so nearly approaches in plumage. Of its nesting habits I am ignorant, though it certainly breeds about Concepcion.

23. **Spermophila cærulescens** *Vieill.* CORBATITA (LITTLE CRAVAT, in allusion to the black collar and white band above it). — Early in November these birds arrive in Concepcion from the north and soon become very common everywhere, but seem to prefer bushes, hedges, and tall weeds.

During the first week in December many nests were found which occasionally contained but one egg each, and never more than two, which seemed to be the normal number. The nests were very neat affairs, made entirely of fine grass, roots, and hair; so closely woven as to be very strong, yet so thin and delicate that the eggs could often be seen through the bottom. The nest was sometimes placed in a mass of fine twigs to which it was bound, but oftener it was only fastened to three or four vertical twigs which passed through its rim, thus making the nest semi-pensile. Rarely was it more than four feet from the ground. The eggs were white with dark flecks. Late in the summer the birds gather into loose flocks or small parties and turn northward again.

24. **Spermophila palustris** sp. nov.

*Adult male: breeding plumage.* Above, from bill to rump, clear bluish-ash; below, from bill to middle of breast, including lower eyelid, ear-coverts, and sides of neck, pure white; rest of under parts, rump, and most of upper tail-coverts, bright cinnamon-brown. Wings and tail brownish-black edged with whitish; inner secondaries deep black, their tips and outer edges broadly white (pure in highest plumage, at other times soiled or even rusty); a white patch across the base of all the primaries except the first two. Bill and feet black; iris dark. Length, about 4.50 inches; extent, about 7.00; wing, about 2.18; tail, about 1.70.

In some individuals, even in high plumage, the ashy feathers of the back show blackish centres.

*Adult female: breeding plumage.* Above, uniform greenish-olive obscurely streaked with dusky; below, light yellowish-buff; wings and

tail nearly as in male but duller, and the inner secondaries with narrower and more yellowish edgings; white spot on primaries same as in male. Upper mandible brown, lower pale yellowish. Length, 4.15 inches; extent, 6.65; wing, 2.07; tail, 1.65.

A male, seemingly immature, yet taken at the same time as the others and in breeding condition, has the upper parts precisely like those of the female, except that most of the greenish-olive is replaced by brownish-olive; the edgings of inner secondaries are broader and lighter, and the rump shows several cinnamon feathers. Below, the color is a mixture of pale buff and cinnamon, all the feathers of the chin and throat showing hoary tips, while the middle of the belly is nearly pure cinnamon.

An adult male taken in late summer (Feb. 2, 1880) is not essentially different from specimens taken in November and December. The areas of color are the same; the white is soiled, the cinnamon pale and dull, the ash of head and back has given place to a dirty gray by the wearing away of the tips and edges of the feathers, and the inner secondaries have lost their light edgings in the same way.

This diminutive Finch seems to resemble *Sporophila hypoxantha* (Cab.) more than any other member of the genus, and it would not be strange if a careful comparison of *palustris* and *hypoxantha* in their different plumages should result in the fusion of the two under one name. As no specimen of *hypoxantha*, however, is at present available for comparison, reference to its descriptions alone is possible, and if they are correct there can be little doubt of the specific distinctness of the present species.

Early in February, 1880, two specimens of an unrecognized Finch were seen by the writer on the edge of a marsh at Concepcion where coarse grass is cut for thatching the houses of the humbler classes. One of these birds was secured and pronounced by Dr. Burmeister of the Buenos Aires Museum to be new to the fauna of the region, so far as he was aware. A careful lookout for other specimens was kept, but nearly ten months elapsed before another individual was taken.

Resting one hot November noon in the scanty shade of a bush on the edge of one of the large marshes which border the lower Uruguay, my ear caught the notes of a song which seemed at first to be that of the common Goldfinch of the country (*Chrysomitris magellanica*) but which, as it rambled on, developed a variety and sweetness far beyond the powers of that bird. An attempt being made to approach the bird, however, it developed other powers of a more practical and (to me) less satisfactory kind, and it was only after a half-mile chase through an indescribable mixture of land, water, and grass—the latter predominating—that a lucky third shot brought it down and a long hunt

among the roots of the eight-foot grass brought to light this tiny *Spermophila*.

Before the gun had been reloaded, or the bird wrapped up and put away, another male appeared, and in the course of an hour or two three more specimens, all males, were added to the first. Many more were seen and several killed, but the nature of the ground made it very difficult to mark them down and find them, while their motions were so quick, and the grass so thick and high, that not one shot in three counted. No females were seen at this time, but within the next two weeks four more males and two females were taken.

That they were nesting in the marsh there is little doubt, but that the nest escaped detection is not strange. The birds were never seen in flocks nor did they often associate with the "Cor-batitas."

The males were oftenest seen chasing each other over the marsh or pausing on the top of some tall grass stem or blighted bush to pour out their delightful song.

Occasionally I caught a glimpse of a small bird in a flock of *Sycalis luteiventris*, which seemed to be unlike anything except this little *Spermophila*, yet may easily have been mistaken. Our little Finch is too fond of the open marsh, the society of the Wood Ibis and Courlan, and the rustling of the knife-edged giant-grass, to be found far from such haunts, and so long as he swells his snowy throat only in such company he need fear little from man.

(To be continued.)

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## DESCRIPTIONS OF NEW SPECIES OF BIRDS FROM SANTO DOMINGO.

BY CHAS. B. CORY.

**Contopus frazari.** General plumage grayish-olive; feathers of the crown dark brown, edged with olive; throat ashy, becoming olive on the sides of the breast and yellowish-brown on the abdomen and crissum; wing-coverts pale at the tips, forming two very dull wing-bands; secondaries very narrowly edged with pale brownish-white; tail brown; under wing-coverts pale yellowish-brown. Length, 5.40; wing, 2.45; tail, 2.65; tarsus, .50; bill, .50.

I have named this species in compliment to Mr. M. A. Frazar, by whom it was collected.

**Sayornis dominicensis.** General appearance of the last species but much larger; abdomen and crissum showing an orange tinge; olive of the sides darker; tail feathers narrowly tipped with dull white. Length, 6; wing, 3; tail, 2.75; tarsus, .62; bill, .55.

I have placed this species in the genus *Sayornis* provisionally.

**Myiarchus ruficaudatus.** Crown dark olive brown, becoming lighter on the back and showing a more decided grayish tinge. Throat and breast ashy; belly, crissum and under wing-coverts, pale yellow; wing-coverts edged with brownish-white, forming two dull wing-bands; tertials broadly edged with yellowish-white. Primaries, except the first, narrowly edged with rufous on the outer rib, showing a broader and much paler edging of the same color on the inner webs of the same feathers. Two central tail feathers dark brown, all the rest having more than half of the inner web *rufous to the tip*. Bill and feet, black. Length, 7.25; wing, 3.50; tail, 3.25; tarsus, .75; bill, .75.

The above may be easily distinguished by the tail markings. *Myiarchus stolidus* from Jamaica approaches it closely, but lacks the bright rufous on the outer tail feather.

**Strix dominicensis.** General plumage above dark brown, shading into orange-rufous on the side of the neck. Quills showing inner webs brownish, outer webs dull orange-rufous, banded with brown. Entire underparts pale orange-rufous mottled with light brown, whitening somewhat on the throat and abdomen. Face deep gray; an ante-orbital spot of black; circle of feathers around the face dark chestnut, bordered with black on the throat. Tarsus not feathered to the feet. Length, 13.50; wing, 10; tail, 4.60; tarsus, 2.45.

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## HOLBÖLL'S RED-POLL (*ÆGIOTHUS LINARIA HOLBOELLI*) IN NEW ENGLAND.

BY WILLIAM BREWSTER.

HAVING occasion, recently, to look up the distribution of Holböll's Red-poll I was astonished to find that it has never been formally accredited to New England, nor even, unless I

have overlooked some obscure record, to any portion of the United States, specimens taken by Cooper at Quebec, being apparently the most southern ones thus far reported. Some one has lately said that we know more about the birds of our remote western plains and mountains than of those which occur nearer home, and it is, perhaps, idle to deny that such a charge contains a grain of truth. At least the past decade has brought many surprises to the student of New England ornithology and it is not likely that the supply is exhausted.

We now have an interesting development affecting New England Red-polls. Among extensive series of *Ægiothi* taken in this vicinity, a small proportion — usually from five to eight per cent — will be found to differ from the ordinary type in being very much larger, with stouter, less acute bills, generally darker coloring, and especially darker, coarser streaking beneath. These birds, if I am not mistaken, are Holböll's Red-poll (*Ægiothus linaria holboëlli*)\*. I have known them these fifteen years or more, as regular, though never very common associates of the Lesser Red-poll. during the latter's winter incursions, a good-sized flock of the common species being usually pretty sure to contain a few of the larger kind. Previous to the present season they do not seem to have occurred in any considerable numbers, but during the past month (February, 1883), they have been actually abundant near Boston, and, on several occasions, have been found in flocks apart from the smaller species.

I had an experience of this kind on February 19, when collecting at Revere Beach in company with Mr. H. M. Spelman. The day was cold and blustering and birds, as is usual at such times, were exceedingly active and restless. Flocks of Red-polls were continually passing, occasionally alighting among the seed-bearing weeds, or clustering for a moment on the spire of an isolated cedar, the next whirling off as suddenly as they came. Under such conditions it was impossible to identify all the individuals seen, but we satisfied ourselves that most of these flocks were made up chiefly of the larger race, while one or two were positively ascertained to contain only the smaller kind. Of the twenty-one specimens actually taken thirteen proved to be *Æ. holboëlli*.

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\* In making this determination I take it for granted that authors are right in referring the American bird to *Æ. holboëlli* of Europe.



A more conclusive instance came to my knowledge a few days later. On February 22 two young collectors happened to fall in with an exceptionally large flock of Red-polls at Nantasket Beach. A few shots into the crowded ranks of the unsuspecting little birds brought down forty specimens, twenty being actually killed at one discharge. I had the good fortune to examine these specimens in the flesh and out of the total number *thirty-four* proved to be *Æ. holboëlli*.

In the present connection it may be worth while to point out some of the characters by which *linaria* and *holboëlli* can be distinguished, especially as this does not seem to have been very thoroughly done, at least in any of our recent works. It will be understood of course that the following remarks are based on Massachusetts specimens and hence relate to winter conditions only.

Upon comparison of well-marked examples the difference between the two forms is at once apparent. *Holboëlli* is considerably the larger bird\* and its bill† is very much stouter‡. The upper mandible is relatively, as well as actually heavier, and more decidedly decurved, its superior outline being often noticeably convex, whereas in *linaria* it is nearly if not perfectly straight. The hind claw, also, is usually, but not always, longer.

In plumage the two forms differ scarcely less strikingly. *Holboëlli* is very much the darker and more heavily marked; the dorsal feathers lack most of the whitish or ochraceous edging so conspicuous in winter examples of *linaria*, the general coloring above being nearly uniform dark brown; the streaks on the sides are blacker, coarser, and more numerous; the forehead darker; the rosy color beneath of the adult male is duller and more restricted, being usually confined to the breast and jugulum.§

\* An adult female in the flesh is equal in size and weight to an average Purple Finch (*Carpodacus purpureus*).

† In some diagnoses the bill of *holboëlli* is described as being wholly yellow, but authorities are not agreed on this point. In the present examples the color of the bill does not differ from that of *linaria*.

‡ The bill is often apparently stouter but never, so far as my specimens show, absolutely so, the effect being produced partly by its greater depth and partly by the fact that the nasal plumules are longer and conceal more of the base.

§ I have seen one specimen in which the rosy was similar in tint and extent to that of *linaria*. Possibly the fully mature birds do not often range as far south as Massachusetts.

*Measurements.\** Five adult males. Wing, 3.10-3.30; tail, 2.46-2.64; length of bill from base, .40-.45; depth of bill at base, .25-.28.

Five immature males. Wing, 3.-3.14; tail, 2.27-2.65; length of bill from base, .40-.45; depth of bill, .25-.26.

Five females. Wing, 2.95-3.07; tail, 2.34-2.55; length of bill, .36-.41; depth of bill, .24-.25.

The above characters have been taken from what I assume to be typical representatives. Between these extremes my series furnishes a perfect intergradation in size and a partial one in respect to shape of bill, coloring, markings, etc. Nevertheless I have yet to see a bird which cannot be consistently referred to one or the other form when the bearing of *all* its characters is carefully weighed. Moreover, it is significant that the apparent connecting links are furnished by large adult *males* of *linaria* and small *females* of *holboelli*, the variations among individuals of the same age and sex failing to afford any real intermediates. Taking this fact into account, and without regard to what has been previously written on the subject, I should interpret the evidence at hand as indicating that *linaria* and *holboelli* are forms closely allied, but nevertheless sufficiently segregated to rank as distinct species. Dr. Coues and Mr. Ridgway, however, agree in treating their relationship as a varietal one, and this opinion, based, as it is, on exceptionally favorable opportunities in respect to the examination of material, should not be lightly disregarded. Still I cannot help suspecting that this point, as well as certain others offered by the genus *Ægiothus*, will bear further investigation, and that this may lead to more or less important changes in the arrangement at present accepted.

It is worthy of note that most of the Holböll's Red-polls taken here this winter have occurred on or very near the sea-shore. Indeed, there is no evidence to show that they have been more

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\* Without going into details of measurements of a large series of *linaria* before me, I will simply remark that out of some sixty specimens, only two (both of which are adult males) give a longer wing-measurement than the smallest *holboelli*. The larger of these has a wing 3.08 inches long. In at least nineteen cases out of twenty, however, I find it perfectly safe to refer a Red-poll with a wing-measurement of 3 inches or over, and a depth of bill of .25 inches or over to *Æ. holboelli*; that is, such a specimen will present most, if not all of the other characters already pointed out as distinguishing this form. In the twentieth case size must be disregarded and the other characters carefully considered. This, of course, relates to New England specimens only.

than usually numerous in Cambridge, Belmont, and other inland towns. This fact may have no real significance, but if we assume that *Æ. holboelli* is chiefly a littoral form, there is less difficulty in understanding why it has so generally escaped notice, for, until very recently, our sea-coast has been rarely visited by collectors during the winter months. Still the bird does occur far inland, for Dr. Merriam writes me that it visits Lewis County, New York, and Mr. Maynard has some typical examples from Minnesota. Perhaps, as with the Lapland Longspur, there is a case of partially interrupted distribution to be made out; at all events it must now be formally entered in the books as an irregular but sometimes abundant winter visitor to New England, as far south at least as Massachusetts. We fear such notoriety will scarcely be to the little stranger's advantage in these days of active collecting.

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### Recent Literature.

THE BRITISH MUSEUM CATALOGUE OF BIRDS.—Since our last notice of this work (see this Bulletin, Vol. III, April, 1878, pp. 77-79) three additional volumes\* have appeared, namely, Volumes IV, V, and VI. Volume IV, like the previous volumes, is by Mr. Sharpe, as is also volume VI, while volume V is the work of Mr. Seebohm. Volume IV is devoted to the two families *Campophagidæ* and *Muscicapidæ*, both composed exclusively of Old World forms. Of the *Campophagidæ* 148 species are described, of the *Muscicapidæ*, 391. In style of treatment and general character this volume is similar to the earlier ones, already noticed at some length in this Bulletin.

Volume V, by Mr. Seebohm, is devoted to the *Turdidæ*, as this group is defined in Mr. Sharpe's scheme of classification, with limits rather dif-

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\* Catalogue of the Birds in the British Museum. Vol. IV. Catalogue of the Passeriformes, or Perching Birds, in the British Museum. Cichlomorphæ: Part I, containing the families *Campophagidæ* and *Muscicapidæ*. By R. Bowdler Sharpe, London, 1879. 8vo, pp. xvi+494, pll. xiv. Vol. V. Catalogue of the Passeriformes, or Perching Birds in the British Museum. Cichlomorphæ: Part II, containing the family *Turdidæ*, (Warblers and Thrushes). By Henry Seebohm, London, 1881. 8vo, pp. xvi+426, pll. xviii. Vol. VI. Catalogue of the Passeriformes, or Perching Birds, in the collection of the British Museum. Cichlomorphæ: Part III, containing the first portion of the family *Timeliidæ* (Babbling Thrushes). By R. Bowdler Sharpe. London, 1881. 8vo, pp. xiii+420, pll. xviii.

ferent from those usually assigned it. It embraces not only the typical Thrushes (subfamily *Turdinæ* of authors generally), but the *Sylviidæ* (subfamily *Sylviinæ* of this work), and the *Saxicolidæ*, which form part of the present author's *Turdinæ*. On the other hand the *Miminæ*, so generally of late regarded as a subfamily of the *Turdidæ*, are excluded. In respect to genera, Mr. Seebohm is eminently and, as we believe, laudably conservative, but in matters of nomenclature he is in some points a law unto himself. In other respects he shows himself to be refreshingly independent and untrammelled by traditional methods of working. In his "Introduction" he strikes the key-note of, for our English friends, a new departure in respect to the treatment of subspecific forms so boldly and with such a true ring that we cannot resist the inclination to let him be heard in part in his own words, even at the expense of extending this notice beyond usual limits.

In respect to genera and generic characters his position is somewhat out of the usual line, as may be seen from the following summary of his remarks on these points, and he expects to be thought more or less heterodox in his treatment of genera.\* "If I am accused," he says, "of disturbing the existing genera of birds, in some instances by cutting up recognized genera, and in others by uniting several together, I can only plead that I have not done so capriciously, but in order to facilitate the perception of the community of origin, which must more and more interest those who accept the theory of evolution." After alluding to the fact that it has been "accepted as an axiom amongst ornithologists that genera must be founded upon structural characters," he states that in the first part of his work he "made use of characters that are not structural in defining some genera," and in other cases "considered so-called structural characters as having only value enough to divide genera into subgeneric groups," while in the second part of the work he has convinced himself "that these so-called structural characters have no generic value at all." and further states that he was obliged to fall back upon "colour or pattern of colour as the only character which indicates near relationship. In my opinion," he continues, "the pattern of the colour in the family or subfamily of *Turdinæ* is a character which is more trustworthy (as showing community of origin), which in fact dates further back than the shape of the wings, tail, and bill." Of the *Sylviinæ*, with 104 species, only 7 genera are recognized, which average 15 species each, the largest genus, *Phylloscopus*, having 25, while the genus *Sylvia* has 23. The subfamily *Turdinæ*, which includes the Bluebirds, Robins, and Stonechats, as well as the typical Thrushes, with 240 species, is divided into 11 genera, averaging 22 each, while some of the larger genera, as *Geocichla*, *Turdus*, and *Merula*, have respectively 40, 48, and 52 species each. While on the subject of genera we may add that the genus *Turdus* includes all the New World Thrushes

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\*That such will be the case is already evinced by a paper by Mr. L. Stejneger (Proc. U. S. Nat. Mus., 1882, pp. 449 et seq.) entitled "Remarks on the Systematic Arrangement of the American *Turdidæ*" (received since the preparation of this review), in which Mr. Seebohm's genera and generic characters are considered.

except 3 referred to *Mimocichla*, 12 referred to *Catharus*, and 16 included in *Merula*. *Merula* (type *Turdus merula* Linn.) differs from *Turdus* (type *Turdus viscivorus* Linn.) only in coloration, and chiefly through the sexes being in *Merula* unlike in color when adult. The name *Merula* is thus held to be untenable for any species of North American Thrush, nor are any "generic" names other than *Turdus* recognized for any of our species, even (excepting *Planesticus*) in a subgeneric sense.

In regard to subspecies, or geographical races, Mr. Seeböhm is eminently sound in theory, but, as we shall have occasion to notice later, is strangely illogical in his manner of designating such forms. "It is also due to the student," he observes, "that some explanation should be given of the way in which conspecies [for this word he acknowledges his indebtedness to Professor Schlegel], or forms between which the difference is only subspecific, are treated in this volume. In the previous volumes of the 'Catalogue of Birds' subspecific forms are recognized. This is an immense stride upon the hard and tight system of previous English ornithologists who refuse to acknowledge the imperfectly segregated species which undoubtedly exist in nature, because forsooth their binomial system of nomenclature does not easily lend itself to their discrimination. The American system, clumsy as it is, has undoubtedly the advantage of being far in advance of the old mode. . . . It is very important that no mistake should be made as to what constitutes a conspecies. Two forms may be very closely allied; but if the difference between them, however small it may be, is constant, and is not attributable to age, sex, or season, the probabilities are that it is a specific difference. On the other hand, if the two forms are so closely allied that they interbreed and produce fertile offspring, which again interbreed, we may draw two inferences—first, that the difference between the two forms is only subspecific, and, second, that between the two extremes must be an infinite gradation of intermediate forms. If the two forms have different areas of geographical distribution (which is usually the case), the intermediate ones will be found where the two areas overlap. If, from any cause, the species should be exterminated in the overlapping areas, and the causes which produced the variations of the two forms still continue, the peculiarities of each become emphasized, until they become so far separated, that should their areas of distribution again overlap they will nevertheless not interbreed, and the two species may be considered to be completely segregated. Under these circumstances, I have preferred to retain the binomial nomenclature for each of the extreme forms, reserving the trinomial name for the intermediate ones, uniting the two specific names by a hyphen, and placing the name of the bird first which it most resembles" (pp. ix, x).

In reference to the above, it may be said that the author's position, as here stated, in respect to subspecific intergrading forms (or conspecific, as our author prefers to term them) is a pretty fair statement of the ground taken ten years since by nearly all our leading American ornithologists, and from which basis they have since worked. It is this view of the matter that has given rise to our system of trinomial nomenclature for subspecific

forms, on which more later when we come to consider our author's peculiar method of using "the trinomial name."

On the subject of nomenclature Mr. Seebohm has a page or two of pertinent remarks which we would gladly quote in full did space permit. In respect to his treatment of specific and subspecific forms, he believes that he "may be considered an ornithological revolutionist by those who have not yet accepted the modern theories of evolution," but at the same time claims to have "adopted conservative principles" upon questions of nomenclature. "The modern attempt," he says, "to carry out the law of priority regardless of consequences, which has introduced so many unknown names into our nomenclature to the detriment of the study of ornithology, has generally been in direct violation of the equally important law of clear definition, which, if it were in its turn carried out in the same unrelenting manner, would further complicate our nomenclature to a perhaps still greater degree. . . . It appears to me to be a great mistake to rake up old and little-used names, and to adopt them because the balance of collateral evidence that they were intended by their authors to be applied to certain species is in their favour. I venture to hope that future ornithologists will retain the old familiar names, even if the law of priority has to be modified to countenance their retention. I have accordingly adopted the law of priority with the following modifications — that names which have been extensively misapplied must be rejected, and names otherwise unobjectionable must be retained, if a majority of ornithological writers have used them, even though they may not be the oldest. . . . Like many other conservative practices, this may not be very logical, but I take it to be an eminently practical solution of the difficulties that surround ornithological nomenclature" (p. xi). These sentiments will doubtless meet with hearty approval on this side of the water from the many who lament the violent upheaval that has, during the last few years, so deeply affected the stability of many long-familiar names in North American ornithology.

Passing now to the body of the work, it may be said in general to be very satisfactorily done. It is modeled on the plan of the previous volumes of the series; there being no formal diagnoses of either the genera or the higher groups, and the distinctive points of specific dissimilarity are generally presented only in the artificial "keys" to the species. Sexual and other phases of plumage are described in detail, followed by a short paragraph on the geographical distribution of the forms in question, with special reference also to the breeding and winter range. The bibliographical citations are reasonably full, and, as we are pleased to see, the date of publication of each work cited is given, as is not the case in most of the other volumes of this invaluable series.

In conclusion we must notice the various ways in which admittedly subspecific forms are treated in respect to nomenclature, and in so doing can but express regret and disappointment, considering the position on the matter of subspecies the author takes in his introductory remarks (in part quoted above), at his, as it seems to us, illogical mode of designating such

forms. On page 14, in speaking of *Sylvia orpheus* and *Sylvia jerdoni*, after referring to the points of difference between the two, and the occurrence of intermediate examples, he says: "We must therefore admit that the difference between the two forms is only a subspecific one, being completely bridged over by examples from intermediate localities." The two forms are then described, and are numbered and stand in the work itself and in the "systematic index" as species in regular standing, the text alone—not the nomenclature or the numeration employed—showing that they are viewed otherwise. They stand "5. *Sylvia orpheus*"; "6. *Sylvia jerdoni*," followed by tables of references and detailed descriptions in the same manner as species of unquestioned standing. Mr. Sharpe's method of treating subspecies is far more reasonable, they being formally recognized as such in his nomenclature, by which method the two forms would stand as follows: "5. *Sylvia orpheus*;" "subspecies *a. Sylvia jerdoni*" in the body of the work and as "5. *Sylvia orpheus*" and "*a. jerdoni*" in the systematic index. To take another example from the many scattered through the volume, at page 16 we have, as a subheading "*Sylvia curruca, Sylvia affinis, and Sylvia althea*," followed by a paragraph from which we quote the following: "This is an excellent example of a species in the process of breaking up into three species. . . . I prefer to treat them as subspecies, adopting the provisional hypothesis that the intermediate forms are the result of the interbreeding of the different races." Each subspecies is then (very properly) treated separately, but with the status, to all appearances, of accepted species, although in the text they are spoken of respectively as the "European form," the "Siberian form," and the "Himalayan form" of the Lesser Whitethroat. To specify another example, the Rock Thrush (p. 316) is said to have "two extreme forms, between which every possible intermediate form occurs"; yet these two forms stand, so far as regards nomenclature and numeration, on the same footing as fully admitted species. In further illustration of this point we may cite the cases of the *Turdus* "*pallassi*" and *Turdus* "*swainsoni*" groups. The three forms composing each appear to him "to be deserving of subspecific rank," or as "imperfectly segregated species," but each has nomenclaturally the same status in his book as the "fully segregated" species. The Mexican and Central American intergrading forms of *Turdus*, even in some cases where Salvin and Godman have united them as one species, are similarly treated. This seems to be a "hard and tight" adhesion to the binomial system little to be expected from one who goes so far as to admit and even seemingly to advocate a better system.

Toward the close of the volume, however, are a few instances of a peculiar or modified use of trinomial names, as at pages 379 and 380, where we find "*Saxicola leucomelæna-monticola*" and *Saxicola monticola-leucomelæna*," in addition to *Saxicola leucomelæna* and *Saxicola monticola*, to express the relationship of two forms intermediate between the two latter, between which, however, he believes "a large enough series will show not two intermediate forms only, but an infinite series." The intent of this method of designation is explained in the passage from the introduction

already quoted. On page 318, in "*Monticola cyanus solitaria*," is an example of trinomial nomenclature pure and simple, but we fear only by the accidental omission of the hyphen between the second and third names.

We are glad, however, to see even any progressive steps on the part of our English friends to meet the difficulties cast in their way by large series of specimens from wide areas, but fear they do not as yet fully realize their extent, or perceive the simplest and most logical way of giving "a handle to their facts" by means of nomenclature. Wide-ranging species will be found to present, in most cases at least, well-marked local forms, connected insensibly by forms less differentiated from the intermediate areas, as soon as large series of specimens shall be brought together from over a wide area — in other words, that many forms which have for a long time passed current as species will be found to insensibly intergrade. In view of this it seems best to let the earliest name applied to any form of a given species stand for the whole group, and indicate such local races as seem entitled to recognition in nomenclature by a third term. Species would thus be distinguished by a binomial title and subspecies by a trinomial one, simply by dropping, by common consent, and for the sake of simplicity and conciseness, the understood connective, "subsp." or "var."

By these remarks on the nomenclature of the volume we by no means intend any serious disparagement of Mr. Seebohm's work, or to set ourselves up as a lawgiver in such matters; on the contrary we admire most heartily his thorough treatment of the subject in hand and the philosophic spirit in which he has approached his task. The general student of ornithology, we are sure, cannot be too grateful for the excellent monograph he has placed at their service.

In volume VI Mr. Sharpe treats of the "first portion of the large family *Timeliidæ* or Babbling Thrushes, a group which is largely represented in the Old World, but contains only a few members in the American continents. Five subfamilies have been described in the present volume, viz: the Bulbuls, the Wrens, the Mocking Thrushes, the Solitaires, and the Bower-birds. The total number of species enumerated is 407; and of these the Museum possesses 315" (p. vi). In style of treatment the volume agrees closely with the first four volumes of the series by the same author. The Bulbuls (subfamily *Brachypodinae*), all Old World types, number 175 species, arranged in 27 genera, the largest genus, *Pycnonotus*, including 36 species. The subfamily *Troglodytinae* next follows, and contains 18 genera and 155 species, 113 of which are American. *Thryothorus* has 32 species, *Thryophilus* 17, and *Campylorhynchus* 22. Of true Wrens only one genus, *Anorthura*, is common to both the Old and the New World. The Dippers (genus *Cinclus*), however, are associated with the Wrens as the last genus of the subfamily. The New World subfamily *Miminae*, or Mocking Thrushes, numbers 12 genera and 47 species. The small American subfamily *Myiadectinae*, or Solitaires, numbers 3 genera and 14 species. The small subfamily *Ptilonorhynchinae* (Bower-birds) contains 6 genera and 15 species, confined to Australia and the Papuan group of islands.



In a few instances Mr. Sharpe admits subspecies, as under *Troglodytes domestica*, where *parkmani*, *aztecus*, and *insularis* are thus treated, but such cases are exceptional; the local races of *Thryothorus ludovicianus* and *T. bewicki* are each accorded full specific rank, although spoken of as "forms" of the species to which they are referred as races by American writers. His criterion for subspecies is therefore, to say the least, obscure. *Harporhynchus rufus longirostris* is not only raised to the rank of a species, but is separated from *rufus* by two intervening species, and is not even spoken of as having a near relationship to *H. rufus*. Finally on this point it may be sufficient to state that in the "subfamilies" *Troglodytinæ* and *Miminæ* no subspecies are admitted outside of the genus *Troglodytes*, with the single exception of a West Indian form of *Mimus*. As in former volumes, there is, as a rule, no direct comparison between closely allied species further than that very inadequately furnished by the "key" to the species standing at the head of each genus. We note a few changes of names, among them *Campylorhynchus couesi* for what has commonly been called *C. brunneicapillus*, the latter name belonging properly to *C. affinis* auct., for which it is here substituted.

In respect to the classification followed in these volumes, Mr. Sharpe states that it is based on that of the late Professor Sundevall. While he adopts his higher divisions ("cohorts") of the Passeres, the arrangement of the lesser groups bears little resemblance to the confessedly artificial arrangement devised by Sundevall. While in the main Mr. Sharpe brings the minor groups into more natural relationship, his relegation of the Dippers (family *Cinclidæ* auct.) to the position of a genus in the subfamily of Wrens is, to say the least, novel if not unwarranted, while the *Ptilorhynchinæ* and some other groups find themselves among decidedly new associates.

The preface to volume VI (dated December, 1881) states: "It is hoped that the succeeding volume (which will conclude the *Timeliidæ*, and which has made considerable progress) will appear within the space of a twelve-month, as also that, with additional extraneous help, the work generally will make more rapid progress than has hitherto been possible." That such will be the case is earnestly to be hoped, so great is the value of the work to all general students of ornithology.—J. A. A.

BIRDS AND INSECTS.\*—Our best authority upon the insect food of birds has continued his observations upon the subject. Professor Forbes set himself to answer the three following questions: 1. Do birds originate any oscillations among the species of insects upon which they feed? 2. Do they prevent or restrain any oscillations of insects now noxious, or capable of becoming so if permitted to increase more freely? 3. Do they do anything to reduce existing oscillations of injurious insects? 4. Do they sometimes vary their food habits so far as to neglect their more usual food

\* The Regulative Action of Birds upon Insect Oscillations. By S. A. Forbes. Bull. No. 6, Illinois State Laboratory of Nat. Hist., Dec. 1882, pp. 1-31.

and take extraordinary numbers of those species which, for any reason, become superabundant for awhile? The present paper deals with the last of these questions, showing to what extent birds depart from their usual practices when confronted with an uprising of some insect species, and how they concentrate for its suppression. The paper is very carefully worked up to show how effectively birds may restore a disturbed balance of life.

An orchard of forty-five acres was selected as the field of operations. It had been infested with canker worms for about six years. "As a result of their depredations, a considerable part of the orchard had the appearance, from a little distance, of having been ruined by fire. Closer examination of the trees most affected showed that the branches, stripped of almost every vestige of green, were festooned with the webbing left by the worms. To the webs the withered remnants of the leaves adhered as they fell, the very petioles having been gnawed off at the twigs. Not one per cent of the trees were uninjured, and these were invariably on the outer part of the orchard. Those which had been attacked several years in succession were killed; and there was a large area in the midst of the orchard from which such trees had been removed. One did not need to enter the enclosure to learn that the birds were present in extraordinary numbers and variety. From every part of it arose a chorus of song more varied than I had ever heard in any similar area at that season of the year." In this place, May 24, 1881, 54 birds of 24 species were taken, and 7 other species were noted. At a second visit, May 20, 1882, 92 birds of 31 species were shot, and 4 other species were seen.

This was the material upon which Professor Forbes worked, the exact examination of the stomachs being the basis of the paper. The whole subject is carefully discussed, three facts standing out very clearly as the results of these investigations.

"1. Birds of the most varied character and habits, migrant and resident, from the tiny wren to the blue-jay, birds of the forest, garden and meadow, those of arboreal and those of terrestrial habit, were certainly either attracted or detained here by the bountiful supply of insect food, and were feeding freely upon the species most abundant. That 35 per cent of the food of all the birds congregated in this orchard should have consisted of a single species of insect, is a fact so extraordinary that its meaning cannot be mistaken. Whatever power the birds of this vicinity possessed as checks upon destructive eruptions of insect life, was being largely exerted here to restore the broken balance of organic nature. And while looking for their influence over one insect outbreak we stumbled upon two others, less marked, perhaps incipient, but evident enough to express themselves clearly in the changed food ratios of the birds.

"2. The comparisons made show plainly that the reflex effect of this concentration on two or three unusually numerous insects was so widely distributed over the ordinary elements of their food that no special chance was given for the rise of new fluctuations among the species commonly eaten. That is to say, the abnormal pressure put upon the canker worm

and vine chafer was compensated by a general diminution of the ratios of all the other elements, and not by the neglect of one or two alone. If the latter had been the case, the criticism might easily have been made that the birds, in helping to reduce one oscillation, were setting others on foot.

"3. The fact that, with the exception of the indigo bird, the species whose records in the orchard were compared with those made elsewhere, had eaten in the former situation as many caterpillars other than canker worms as usual, simply adding their canker worm ratios to those of other caterpillars, goes to show that these insects are favorites with a majority of birds."

We notice the unexpected fact respecting *Fringillidæ*, that only 7 per cent of the food of 47 individuals of this "seed-eating" family, consisted of seeds, insects making up all but 2 per cent of the remainder. The canker worms alone made 40 per cent. But in this case it must be remembered that the circumstances were highly exceptional.

We trust Professor Forbes will not desist from his good work. Such exact data as these are just what is required for the solution of the general problem which is offered by the relations of the bird-world to agriculture. — E. C.

ECONOMIC RELATIONS OF BIRDS AGAIN.\*—Upon the heels of Prof. Forbes's paper, but since the foregoing notice was penned (else the two contributions to the same subject might have been profitably considered together), comes the very elaborate result of Prof. King's examinations of the food of birds in its bearing upon our agricultural interests. The question,—one of great economic importance,—seems to be only of late brought forward with sufficient prominence; and it is evident from what these two investigators have accomplished, that our ornithologists have hitherto taken it up, if at all, only after methods entirely inadequate to its solution. Observations have usually been no more than incidental to our study of the habits of birds, instead of being sufficiently prolonged, exact and systematic to yield sound results. Prof. King's field-work, we are informed, was commenced in 1873, and is apparently only just concluded—his attention during this long period being steadily and rigidly directed to discovering what and how much food Wisconsin birds eat, with the view of classifying these birds in certain categories—primarily those beneficial to or injurious to, man in economic relations. This is certainly a worthy devotion, undertaken in truly scientific spirit, and carried out with an earnest purpose. It should go far toward accomplishing the desired result,—though we fear the problem is too intricate, involving too many unknown quantities, to be solved perfectly by never so many tabular statements of contents of birds' stomachs. We suspect that the general equation reduced to its simplest practical terms will prove in the end to be, that the fewer birds of all kinds killed the better for us.

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\* Economic Relations of Wisconsin Birds. By F. H. King. Wisconsin Geological Survey, Vol. I, chap. xi, pp. 441-610, figg. 103-144. Roy. 8vo.

"The facts recorded in this report were obtained from an examination of the contents of the stomachs of over 1800 birds, 1608 of which contributed results which have been incorporated in the report." The contents of one-half these stomachs were examined fresh, with the hand-lens, the rest more leisurely and in greater detail after transference to alcohol. "But had it been possible," says the author very truly, "to identify specifically the 7663 insects, etc., taken from the stomachs of these 1608 birds, this would have been by far the smallest part of the task set, for then it would be required to command a full and broad knowledge of the economic relations of the insects eaten. But with the difficulty solved, we must recognize still another, of greater magnitude and higher degree. Because of these great difficulties inherent in the task itself, and the ample grounds they present for difference of opinion in regard to final conclusions, it has seemed very desirable that there should be presented some of those general considerations which have served as guides to the classification adopted."

These considerations are therefore presented, and very elaborately, in the Introduction, which occupies some 30 pages. Bird-food, considered in its two broad categories of vegetal and animal, is farther ranged under the two leading classes of that, the consumption of which is on the whole (1) a service, or (2) an injury, to man. Beneficial services of birds are stated and discussed under the following propositions: A bird is beneficial when it feeds upon injurious (1) plants, (2) mammals, (3) birds, (4) reptiles, (5) insects [the real *cruux* of the problem], (6) mollusks, (7) crustaceans and worms, (8) carrion. (We state it very broadly and tersely—the author's own propositions are elaborated and qualified in various ways.) On the other hand, a bird is injurious under nearly the same number of contrary conditions; as when (1) it destroys or injures useful plants; (2) preys on shrews, moles, and bats; (3) upon beneficial birds; (4) upon lizards and small snakes; (5) upon frogs, toads, and salamanders; (6) upon the parasites of noxious animals, especially noxious insects; (7) upon beneficial predaceous insects, spiders, and myriapods; (8) upon carrion insects; (9) upon beneficial worms. These numerous points receive due attention.

"When it is proposed to utilize birds as insect destroyers, to increase the abundance of certain species and to exterminate or hold in check others, to encourage the breeding of certain birds in given places and to prevent others from doing so; or, when it is proposed to introduce into a country a foreign species, other questions than those of food simply must be considered." Some of the more important of these are given by the author as: (1) The relations held by the bird to different industries; (2) its food and habits in different localities; (3) during different seasons; (4) when young and mature; (5) when and how long the bird is in a given locality; (6) its nesting place; (7) its other haunts; (8) its hours of feeding; (9) methods of obtaining food; (10) situations in which its food is obtained; (11) whether or not the bird does an important work which other birds are not fitted to do; (12) size and activity of the bird; (13) its gregariousness or the reverse; (14) its dexterity upon the wing; (15) its

general disposition; (16) its value as food to man; (17) its furnishing or not a habitat for troublesome parasitic entozoa; (18) its fecundity. The discussion of these various points leaves one in no doubt whatever that, whether or not the author has solved the problem, he has certainly sketched many of its factors, and mapped out a proper course of study.

Among "other considerations" with which the introduction continues are: (1) the changing habits of birds; (2) can they ever become abundant in thickly settled districts? (3) what birds, if left to themselves, are likely to become most abundant as the country grows older? (4) some birds may be injurious to a locality which they seldom or never visit (a curious fact — *e. g.*, destruction, during the migration, of useful birds of prey); (5) do birds of prey perform a necessary work by holding in check certain birds and noxious animals? (6) parasitism among birds; (7) the scientific, educational and æsthetic value of birds.

The Introduction closes with "a Temporary Classification of Wisconsin Birds on an economic basis," as follows:—

Group I. Birds whose habits, so far as they are known, render them, on the whole, beneficial.

(a) Birds whose known habits render them beneficial at all times.

(b) Birds which are known to be to some extent injurious, but whose known services exceed their known injuries.

(c) Birds whose flesh is valuable for food, and whose present abundance and slight usefulness as insect destroyers make it proper to permit their destruction as game.

Group II. Birds whose habits, so far as they are known, make it doubtful whether they are, on the whole, beneficial or injurious. (With three categories, *a*, *b*, *c*.)

Group III. Birds whose habits, so far as they are known, render them, on the whole, injurious.

(a) Birds whose known habits render them injurious at all times.

(b) Birds which are known to be to some extent beneficial, but whose known injuries exceed their known services.

It would certainly appear that most birds fall in group I, category (*a*) or (*b*) — happily for us and them!

A curious question is raised, How shall a bird's food be expressed numerically in terms of debit and credit? because neither relative volumes nor relative weights of beneficial or detrimental food-elements can express the true economic relations of the bird, any more than a peck of plums can be compared with a peck of curculios — any more than the destruction of 3000 phylloxera can be set against that of one coral-winged grass-hopper, as it would be if bulk for bulk were gauged. The author's method of meeting this difficulty, arising from the fact that we have no standard of insect values, is novel and ingenious, to say the least. It consists essentially in the use of heavy black *lines* of different lengths, showing graphically, not numerically, the ratios of animal or vegetal foods, of the several items of each, and particularly the ratios of "beneficial" and "detrimental" food-elements, and those undetermined in these respects.

The body of the report is primarily of the nature of an ordinary "local list" for the State of Wisconsin, giving in systematic order 295 species; nor must the claims of the paper in this regard be entirely overshadowed by the importance of its main object. Every bird is referred to one or another of the several "Groups" and subgroups above mentioned. The "tabular summaries of economic relations," expressed in the peculiar manner above noted, are given for such species in sets, according to families. The report is well-written, giving in many cases extended biographies, aside from those points which in each case of course engage the author's special attention. Besides detailed results of his own observations, statements of many other authors respecting the food of our birds is condensed and summarized. The numerous woodcuts are chiefly taken from Baird, Brewer, and Ridgway. The flavor of the author's personality is appreciable, as we were sure we should find it to be, after reading in the preface what Prof. King has to say of his "sojourn for six months in the sunshine of a warm heart;" and if we had the heart to pass any ungracious criticism upon so laborious, meritorious and interesting a report, the printer rather than the author would be our victim.—E. C.

REPORT ON THE BIRDS OF OHIO.\*—This long-deferred work reaches us at length in the form of a treatise on the ornithology of the State so extensive and so systematic that the time its preparation has occupied seems justified if not absolutely required. The inside history of the publication repeats that of most scientific work which struggles for existence in the meshes of official red-tape. It was begun in 1873, the author being given a year in which to complete it. In 1874, he was ready with an annotated and descriptive catalogue of his birds, which might have made perhaps pp. 100 of print. This was rewritten and extended in 1875; and again, in 1877-'8, with addition of the synonymatic and bibliographical matter, and the appendix. As appears by the date of the letter of transmittal, printing began in November, 1879, and continued to p. 352, January, 1880, when it was stopped till December, 1880, when it was resumed, with more or less prolonged interruptions until completed in the summer of 1881. Then the sheets appear to have been stored for a year or more before actual publication, which was late in 1882. The bird-matter appears in two forms—as a part of the whole volume, and as a small edition of separate extras—the latter, however, fortunately without repagination or any alteration whatever.

Though about a year and a half behindhand, and consequently without the finishing touches which the author's careful attention to the progress of the science during that period would doubtless have led him to give had circumstances permitted, Dr. Wheaton's report must at once take place at the head of State Faunas, so far as ornithology is concerned. It repre-

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\* Report on the Birds of Ohio. By J. M. Wheaton, M. D. Report of the Geological Survey of Ohio, Vol. IV, pt. i, pp. 188-628. Columbus, O. Nevins & Myers, State Printers. 8vo. 1882.

sents a large amount of original research, extending over nearly a decade, diligently and intelligently applied to the construction of a systematic treatise which possesses the necessary qualities of a good working handbook of the subject. Indeed we recall no other "local fauna" of equal extent, which rivals this one in methodical treatment. Ohioans have here, in fact, a correct history and description of their 300 birds, systematically arranged and classified, with diagnoses of the genera and higher groups, a considerable synonymy of each species with special reference to state literature, and a local bibliography—the whole forming a work of that useful kind called "a manual," and bearing the weight of competent authority. Since the death of Dr. Kirtland, we doubt that any one is better entitled to speak of Ohioan birds than Dr. Wheaton, who appears to have himself collected, in the vicinity of Columbus, more than two-thirds of the species he treats, and to have admitted none that he has not personally identified, except upon unimpeachable authority. His own description of his book, albeit perhaps too modest, may be transcribed:—

"In the following pages I have made free use of the writings of several authorities. The descriptions of species are almost without exception or alteration from Dr. Elliott Coues' *Key to North American Birds*. The keys to the genera are from Prof. D. S. Jordan's *Manual of Vertebrates*, the definitions of the higher groups are by Dr. Coues, and taken from the introductory chapter of *North American Birds*. The nomenclature adopted is that of Dr. Coues in his *Check List of North American Birds* [1874], with such modifications as changes, made since its publication, require. This is followed by references to all writers, whether general or local, who have mentioned that species as Ohioan. This is followed in most cases by such synonyms as will enable changes in the nomenclature to be traced. Following the description I give, as briefly as possible, an account of its general and breeding habits, together with such biographical observations as seem to me interesting or valuable. In the appendix I have inserted a list of the birds, with the dates of their appearance and disappearance, as observed by me in this vicinity; a list of the birds identified by me in my garden in this city; a bibliography of Ohio Ornithology, and a glossary of such scientific words as require definition" (p. 197). To which we may add that the work opens with a consideration of the physical geography of Ohio in its relation to the bird-fauna of the state; and that the appendix includes, besides late additions to and corrections of, the main text, an essay "on the relation between latitude and the pattern of coloration in Ohio birds," which will be found to contain some curious and novel observations.

"The list gives 292 species, 4 of which are represented by additional varieties, and 2 introduced species, making a total of 298 species and varieties. Of these 6 are considered accidental" (p. 570).

We have said enough to certify that this volume of some 450 pages is no slight nor uncertain addition to our ornithological literature. It is easily first in its special field, and takes its permanent place among the more comprehensive treatises on North American birds. Aside from the more

technical portions, the text is well written, and possesses the attraction of being mostly new and original. The mechanical execution of the work reminds us to say that "official" printing—paper, typography and binding—is generally so bad, that we wish we could instance the present case as an exception to the rule, though it might easily be worse than it is.

Dr. Wheaton is one of the pioneers in Ohioan ornithology, his publications upon the subject extending over a period of more than twenty years; and the Survey is certainly to be congratulated on the result of not intrusting the report to other hands, as we believe was at one time contemplated.—E. C.

ILLUSTRATIONS OF THE NESTS AND EGGS OF THE BIRDS OF OHIO.—We are always glad to record the continuation of this great work, the merits of which we have already sufficiently indicated. The last number which has reached us is a double one, being Parts 14 and 15, October 1882 and January 1883, published together about January 1, raising the text to p. 154, and the illustrations to pl. xlv. Pl. xl, representing *Icterus spurius*, is very characteristic as well as artistic; pl. xli, *Petrochelidon lunifrons*, with the bird itself protruding from the nose of the bottle; pl. xlii, *Thryothorus bewicki*, very prettily executed, and probably the first representation of the nest and eggs of this bird ever published; pl. xliii, *Astragalinus tristis*, in the crotch of a rank thistle; pl. xlv, *Melanerpes erythrocephalus*, the wood sawn to show the shape of the excavation, with the eggs at the bottom. Plate xlv introduces a new feature which was sure to come before the end, in cases where no nest is constructed, or the nest is too bulky to be represented, consisting of the eggs, three each, of *Tringoides macularius*, fig. 1, *Ægialites vociferus*, fig. 2, *Asio accipitrinus*, fig. 3, and *Corvus frugivorus*, fig. 4.—E. C.

BROWN'S BIRDS OF PORTLAND.\*—This excellent local list—desirably supplementing those of Maine birds by Holmes, 1861; Verrill and Boardman, 1862; Hitchcock, 1864; Hamlin, 1865;—is stated to be prepared from notes systematically taken during the past twelve years, and to contain the names of scarcely any species which have not passed under the author's personal observation. Its reliability is therefore evident. The number of species given is 250, of which *Passer domesticus* and *Coturnix communis* are artificial introductions. The annotations, though not extensive, are to the point and seem judiciously adapted to convey a fair idea of the part each species plays in the composition of the Avifauna. This is really a more important matter than the mere enumeration of names, however nearly complete; for about half of the birds actually occurring in a given locality stamp the facies of its bird-life more clearly and characteristically than the other moiety of rare transients, irregular visitants, and "accidents." We could wish that this matter had been brought out

\*A Catalogue of the Birds known to occur in the vicinity of Portland, Me. [etc.]. By Nathan Clifford Brown. Proc. Portland Soc. Nat. Hist., Dec. 4, 1882. Also separate, Portland, 8vo, pp. 37.



even more clearly by summaries at the end of the paper, in which tables it is always desirable to present birds in their several categories of permanent residents, summer visitants, spring and fall migrants, winter visitants, and the "irregular" or stragglers.

We note, as of interest in considering this locality: *Poliioptila cærulea*, *Oporornis agilis*, *Coccygus americanus*, *Ulula cinerea*, *Falco islandicus*, *Falco peregrinus*, *Cathartes aura*, *Herodias egretta*, *Florida cærulea*, *Actodromas bairdi*, *Ancylochilus subarquatus*, *Recurvirostra americana*, *Rallus elegans*, *R. longirostris crepitans*, and other rarities; and not only on account of their intrinsic interest, but as showing that the locality must have been pretty carefully gone over.

The article is fairly well printed, but, aside from typographical errors, we are surprised that Mr. Brown should have overlooked the peculiar orthography to be found here and there, which may, however, result from "authority" or personal predilection. We do not understand the use of the term *Spizella montana* (Forst.) Ridg. Forster certainly never described or named our Tree Sparrow, properly speaking—he simply mistook it for the European *Passer montana*; and no nomenclatural availability is conferred by the fact that the two birds belong to different modern genera.

We wish that the author had not deemed it advisable to suppress the original pagination of the article as a part of the Proceedings, and the number of the volume of the latter in which it appeared; for, as the pamphlet stands, we have no means of properly citing its original edition.—E. C.

RIDGWAY ON THE TREE-CREEPERS.\*—Mr. Ridgway states that after a careful consideration of much material and all that has been written on the subject, he has been "forced to the conclusion that the *C. mexicana* itself cannot stand even as a race, or else it becomes necessary to recognize a larger number of races than have [has] usually been claimed for the species. In other words, it is simply a question of whether geographical variations of form and color are to be completely ignored as a factor in the genesis of species, or whether they should receive due consideration in connection with this important subject." Accepting the latter view as the more scientific one he proceeds to characterize 7 races as susceptible of definition, 3 of which are for the first time named. These races are as follows: 1. *familiaris* Linn., Scandinavia; 2. ? *costæ* Bailly, Central Europe; 3. *britannica* subs. nov., British Islands; 4. *rufa* Bartr., Eastern North America; 5. *montana* subs. nov., Middle Province of North America; 6. *occidentalis* subs. nov., Pacific coast of North America; 7. *mexicana* Gloger, Guatemala and Southern Mexico.—J. A. A.

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\*Critical Remarks on the Tree-creepers (*Certhia*) of Europe and North America. By Robert Ridgway. Proc. U. S. Nat. Mus., 1882, pp. 111-116. July 8, 1882.

RIDGWAY'S REVIEW OF THE GENUS CENTURUS.\*—This revision is based on an examination of 227 specimens, representing 12 of the 14 forms considered as sufficiently distinct for recognition, of which "not more than six, or less than one-half, can be said to be perfectly isolated, or to possess the requirements of perfectly distinct species." "The so-called genus *Centurus*," says Mr. Ridgway, "is scarcely more than an artificial division of *Melanerpes*, distinguished from the typical section of that genus chiefly, if not only, by a different system of coloration, which characterizes most of the species." Even in this respect the intergradation is so complete that certain species may be referred with almost equal propriety to either group. *C. terricolor* is considered as doubtfully distinct from *C. tricolor*. To *C. aurifrons* are referred as races *santacruzi* Bon., *dubius* Cabot, and *hoffmanni* Cabanis. Each form recognized is described in detail, and the whole subject is treated with Mr. Ridgway's usual care and completeness. —J. A. A.

LAWRENCE ON NEW SPECIES OF BIRDS.†—In the first paper here mentioned Mr. Lawrence describes a new subspecies of *Loxigilla* (*L. portoricensis* var. *grandis*) from the Island of St. Christopher, W. I., collected by Mr. Ober. It differs from *L. portoricensis* in larger size and in some points of coloration. In the second paper he describes *Chætura gaumeri*, from Yucatan, allied to *C. vauxi*. In the same paper he has notes on *Pyranga roseigularis* Cabot, previously known from the single type specimen, and describes the female. He also describes the female of his *Centurus rubriventris*, and maintains its distinctness from *C. tricolor*, to which it has been referred. The species described in the third paper are *Leptoptila fulviventris* and *Formicarius pallidus*, both from Yucatan. In the fourth paper is described *Hemiprocne minor*, from New Granada. —J. A. A.

FREKE ON NORTH AMERICAN BIRDS CROSSING THE ATLANTIC.‡—This paper is based on the author's "Comparative Catalogue of Birds found in Europe and North America," published in 1880 (reviewed in this Bulletin,

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\* A Review of the genus *Centurus*, Swainson. By Robert Ridgway. Proc. U. S. Nat. Mus., 1881, pp. 93-119. June 2, 1881.

† 1. Description of a New Subspecies of *Loxigilla* from the Island of St. Christopher, West Indies. By George N. Lawrence. Proc. U. S. Nat. Mus., 1881, pp. 204, 205. Nov. 18, 1881.

2. Description of a New Species of Swift of the genus *Chætura*, with Notes on two other little known Birds. By George N. Lawrence. Ann. New York Acad. Sci., Vol. II, No. 8, pp. 247, 248. March, 1882.

3. Descriptions of New Species of Birds from Yucatan, of the Families Columbidae and Formicariidae. By George N. Lawrence. Ann. New York Acad. Sci., II, No. 9, pp. — —, 1882.

4. Description of a New Species of Bird of the Family Cypselidae. By George N. Lawrence. Ann. New York Acad. Sci., II, No. 11, p. —, 1882.

‡ North American Birds crossing the Atlantic. By Percy Evans Freke. 8vo, pp. 11. From Scientific Proc. Roy. Dublin Society, Vol. III, 1881.

Vol. V, pp. 173, 174), of which it may be regarded as in part a summary, as also a most valuable résumé of the general subject of North American birds occurring in Europe. The species are divided into the three categories of "Land Birds," "Wading Birds," and "Swimming Birds," which are each separately tabulated to show the number of occurrences of each species in Europe, the countries where they were observed, and the month in which they were taken. The number of species is 69; the total number of occurrences, 494. The most decided result obtained by this analysis is the remarkable preponderance in the number of birds which visit Europe from North America during the autumnal migration as compared with the vernal migration, the ratio being apparently as 168 to 61. This leads the author very naturally to the belief that North American birds, in reaching Europe, are borne irresistibly eastward by the strong westerly winds which prevail at the periods of migration, and that of the large number blown out of their course and unable to return but a few only survive to reach the European shores. The preponderance of such arrivals in autumn is attributed to the large proportion of young birds then migrating, which are less able to resist adverse currents than are the older and stronger.—J. A. A.

FREKE ON EUROPEAN BIRDS OBSERVED IN NORTH AMERICA.\*—The total number of species included in the list is 56, of which 9 are regarded as artificially introduced, leaving 47 as wanderers from the Old World. Of these latter 13 are Land Birds, 17 are Waders, and an equal number are Swimmers. Of the whole number (47) only 12 have been recorded from the Eastern United States, 20 have been found only in Greenland, while 9 others have occurred only on the Pacific Coast (chiefly in Alaska). *Saxicola ænanthe*, *Motacilla flava*, and five other species of Old World birds found more or less frequently in Greenland are excluded from the list as being on this account properly North American. On the other hand, *Tringa subarquata* and *Puffinus anglorum* are included among the stragglers from Europe. The list seems to have been most carefully worked out and may deservedly stand as a companion piece to Mr. J. J. Dalglish's "List of Occurrences of North American Birds in Europe," published in volume V of this Bulletin. The number of American visitors to Europe recorded by Mr. Dalglish, it may be remembered, is 67, or 20 more than appear to have visited us from the Old World.—J. A. A.

CANADIAN BIRDS—ERRATA.—[In the January number of the Bulletin (Vol. VIII, p. 57) is a review of a paper on birds observed near Ottawa, Canada, by Geo. R. White and W. L. Scott, in which reference is made to several astonishing announcements of species taken. In justice to the authors of the paper it is but fair to say that a list of "errata" were received by the editors of the Bulletin from Mr. Scott several days before

\*On European Birds observed in North America. By Percy E. Freke. Zoologist, Sept., 1881. Also separate, pp. 1-14.

the January Bulletin was issued, but too late to be inserted in that number. We may further state that we are informed that the authors were away on a collecting trip when the paper was printed, and had no opportunity to correct the proof-sheets. The list of errata sent by Mr. Scott are here appended.—EDD.]

List of *Errata*.—Omit Nos. 12, 132, and 329. For “34 *P. rufescens*, Chestnut-backed,” read “33 *P. hudsonius*, Hudsonian.” After No. 337 read “One specimen seen, not shot.” No. 406, for “Brown” read “Brant.” For No. “470 *P. Jamaicensis*, Black,” read “467 *R. Virginianus*, Virginian Rail.” No. 507, for “Buffalo” read “Buffle.” For “555 *L. Franklinii*,” read “556 *L. Philadelphia*”; the English name is correct.

Nos. 162 and 398 are doubtful, both specimens having been mislaid.

In the “Report” itself the following corrections have to be made: Page 27, line 6, for “Iwelin” read “Gmelin”; l. 10, for “*Columbus*” read “*Colymbus*”; l. 13, for “*Haliaetus*” read “*Haliaëtus*”; l. 25, for “*Sayomis*” read “*Sayornis*.” P. 28, l. 5, for “*H. cinereous*” read “*H. rufus*.”—W. L. SCOTT.

MINOR ORNITHOLOGICAL PUBLICATIONS. — “Forest and Stream” for 1882 (Vols. XVIII and XIX) contains the following notes and articles (Nos., 190-235):

190. *Birds observed in Central Dakota. During the Summer of 1881.* By W. L. Abbott. *Forest and Stream*; XVII, No. 24, p. 486, Jan. 12, 1882.—A briefly annotated list of 81 species, observed “on a trip through central Dakota.”

191. *Questions about Wild Turkeys.* By W. M. Waite. *Ibid.*, XVII, No. 25, p. 487, Jan. 19, 1882.—Remarks on “two distinct kinds [of Turkey], with a cross between the two, inhabiting one locality.”

192. *Habits of Woodpeckers.* *Ibid.*, XVII, No. 26, p. 507, Jan. 26.—Two communications, signed respectively “Byrne” and “S. H. M.”, chiefly on Woodpeckers storing food for winter use.

193. *The Road-runner.* By J. E. Wadham. *Ibid.* XVIII, No. 2, p. 27, Feb. 9, 1882.—On the habits of *Geococcyx californianus*.

194. *Habits of Cormorants* [*Phalacrocorax “mexicanus.”*] By “Byrne.” *Ibid.*, XVIII, No. 2, p. 27, Feb. 9, 1882.

195. *The Fauna of Spirit Lake [Iowa].* By A. A. Mosher. *Ibid.*, XVIII, No. 4, p. 66, Feb. 23, 1882.—Chiefly about birds.

196. [*Habits of*] *Red-headed Woodpeckers.* By H. W. Merrill. *Ibid.*, XVIII, No. 5, p. 66, Feb. 23, 1882.

197. *Recapture of the Australian Crested Parroquet at Sing Sing, N. Y.* By A. K. Fisher, M. D. *Ibid.*, XVIII, No. 4, p. 67, Feb. 23, 1883.—An escaped example of *Calopsittacus novæ-hollandiæ*.

198. *Crafty Feathered Fishers.* By J. C. Hughes. *Ibid.*, XVIII, No. 5, pp. 85, 86, March 2, 1882.—Capture of fish by the Bald Eagle (*Haliaëtus leucocephalus*) and the Fish Crow (*Corvus caurinus*).

199. *English Widgeon on the New Jersey Coast.* By “Homo.” *Ibid.*, XVIII, No. 5, p. 86, March 2, 1882. — “Several” taken during “the

past two or three years" by baymen in Tuckerton and Big Bays, near Little Egg Harbor Inlet.

200. *Screech Owl* [*Scops asio*] in *Confinement*. *Ibid.*, XVIII, No. 6, pp. 106, 107, March 9, 1882.

201. *Shore Birds in Grenada*. By "Certhiola." *Ibid.*, XVIII, No. 7, p. 127, March 16, 1882.—Dates of arrival of 11 species.

202. *Ornithological Nomenclature*. By Everett Smith. *Ibid.*, XVIII, No. 8, p. 145, March 23, 1882.—An earnest protest against various recent changes and innovations in the nomenclature of North American birds.

203. *The New Check List*. By Elliott Coues. *Ibid.*, XVIII, No. 9, pp. 166, 167, March 30, 1882.—Announcing the new edition of the author's Check List as nearly ready for publication and giving an extract of several paragraphs from the "Introduction," anent the article last above-cited.

204. *Winter Notes. The Winter of 1881-2 in Lewis County, Northern New York*. By C. Hart Merriam, M. D. *Ibid.*, XVIII, No. 11, p. 207, April 13, 1882.—An article, nearly a page in length, chiefly ornithological.

205. *Early Birds in Maine*. By Everett Smith. *Ibid.*, XVIII, No. 11, p. 208, April 13, 1882.

206. *Red-headed Woodpeckers in Maine*. By Everett Smith. *Ibid.*, XVIII, No. 11, p. 208, April 13, 1882.—Their recent appearance in Maine.

207. *Spring Notes*. *Ibid.*, XVIII, No. 14, p. 266, May 4, 1882.—Three short articles relating respectively to (1) Kings County, Nova Scotia (by J. M. J[ones].), (2) Taunton, Mass. (by J. C. Cahoon), and (3) Deering, Me. (by J. E. M.), noting the arrival of birds at these localities.

208. *Cardinal Redbird winters in New York*. By Louis A. Zerega. *Ibid.*, XVIII, No. 15, p. 286, May 11, 1882.—The *Cardinalis virginiana* stated to be a permanent resident in Central Park, New York City.

209. *Spring Notes*. *Ibid.*, XVIII, No. 16, p. 305, May 18, 1882.—Four short papers relating to (1) Philadelphia, signed "Homo"; (2) Portland, Conn., by Jno. H. Sage; (3) Bay Ridge, L. I., by A. L. Townsend; (4) Cleveland, O., by Seym. R. Ingersoll.

210. *Odd Nesting Places*. By Col. Culver. *Ibid.*, XVIII, No. 16, p. 305, May 18, 1882.—Of *Cotile riparia*, *Coccygus erythrophthalmus*, *Turdus migratorius*, and *Melospiza meloda*.

211. *The Music of Nature. Our Wood Thrushes*. By B. Horsford. *Ibid.*, XVIII, No. 17, p. 326, May 25, 1882.—Description of the birds and their songs, with an attempt to indicate their notes by use of the musical scale.

212. *Birds and Electric Lights*. By W. N. B[yers?]. *Ibid.*, XVIII, No. 19, p. 366, June 8.—Destruction of large numbers of birds by flying against the framework of electric light towers in Denver, Col.

213. *Remarkable Flight of Warblers*. By F. C. Browne. *Ibid.*, XVIII, No. 20, p. 386, June 15, 1882.—In Eastern Massachusetts, May 21 and succeeding days.

214. *Some Oölogical Notions*. By Lew Vanderpoel. *Ibid.*, XVIII, No. 21, p. 407, June 22, 1882.—Notes, among other things, that the eggs of the same species are almost invariably larger in the North than in the South,

and adds: "Perhaps the late Dr. Brewer's theory in this respect is sufficiently absolute that we might safely accept it as a law." *Query*: Where is this "theory" announced? See in this connection Bull. Nutt. Orn. Club, Vol. I. 1876, pp. 74, 75.

215. *Arrival of Spring Birds [at Bay Ridge, L. I.]*. By W. S. L. *Ibid.*, XVIII, No. 22, p. 427, June 29, 1882.

216. *A Mallard's Strange Nesting Place*. By Burr H. Polk. *Ibid.*, XVIII, No. 22, p. 427. — On the open prairie, in eastern Colorado.

217. *The Nighthawk in Cities*. By Louis A. Zerega. *Ibid.*, XVIII, No. 24, p. 467, July 13, 1882. — On the nesting of *Chordeiles popetue* on the flat rooftops of houses.

218. *Swallow-tailed Kite in Ohio*. By E. A. Brown. *Ibid.*, XIX, No. 3, p. 44, Aug. 17, 1882. — Taken at North Bloomfield, June, 1882.

219. *Note on the Red-headed Woodpecker*. By Samuel F. Dexter. *Ibid.*, XIX, No. 4, p. 65, Aug. 24, 1882. — Nesting at Oakland Beach, near Providence, R. I., July 28, 1882.

220. *Breeding Quail in Confinement*. By John J. Willis. *Ibid.*, XIX, Nos. 9 and 10, pp. 164, 165, 185, 186, Sept. 28 and Oct. 5, 1882. — Account of successful attempts at breeding *Ortyx virginiana* in confinement, copied from Westfield, N. J., "Monitor."

221. *Bird Migration in the Mississippi Valley*. Compiled from the notes of Mr. O. Widmann by W. W. Cooke. *Ibid.*, XIX, Nos. 10, 11, and 12, pp. 184, 185, 205, 224, Oct. 5, 12, and 19, 1882. — A very full and detailed record of arrivals and departures for the spring of 1882 at St. Louis, Mo.

222. *Spring Birds of Quebec*. By John Neilson. *Ibid.*, XIX, No. 11, pp. 205, 206, Oct. 12, 1882. — A detailed report for the period March 1 to July, originally published in the Quebec "Morning Chronicle."

223. *An Audacious Goshawk (Astur atricapillus)*. By C. Hart Merriam, M. D. *Ibid.*, XIX, No. 12, p. 225, Oct. 19, 1882.

224. *Western Shrike in New England*. By J. C. Cahoon. *Ibid.*, XIX, No. 12, p. 225, Oct. 19, 1882. — Capture of "*Lanius ludovicianus excubitorides*" at Taunton, Mass., Sept. 12, 1882.

225. *The Pine Grosbeak. Pinicola enucleator, Vieill.* By Dr. Elliott Coues. *Ibid.*, XIX, No. 14, pp. 264, 265, Nov. 2, 1882. — General history of this species.

226. *Bird Migration in the Mississippi Valley*, from observations collected by W. W. Cooke. *Ibid.*, XIX, Nos. 15 and 16, pp. 283, 284, 306, Nov. 9 and 16, 1882. — A condensed summary of observations made at twelve localities by different observers, extending from Fayetteville, Ark., northward to White Earth, Minn.

227. *A Cormorant in the Adirondacks*. By A. R. Fuller. *Ibid.*, XIX, No. 16, p. 307, Nov. 16, 1882. — A specimen of *Graculus dilophus* Linn., killed Nov. 9, 1882, at Meacham Lake by F. N. Collins.

228. *Caged Pine Grosbeaks*. By B. Horsford. *Ibid.*, XIX, No. 17, pp. 323, 324. — An interesting account of the habits of *Pinicola enucleator* in confinement.

229. *Grouse* [*Cupidonia cupido*] on Martha's Vineyard. By S. C. C. *Ibid.*, XIX, No. 18, p. 344, Nov. 30, 1882.

230. *Death of Mr. Willis's Quail*. *Ibid.*, XIX, No. 18, p. 345, Nov. 30, 1882. — Note from Mr. John J. Willis, of Westfield, N. J., announcing the death of his domesticated Quail [*Oxyx virginiana*] with an autoptical report on the dead birds by the editor [G. B. Grinnell]. (See above, No. 220.) For a further note on the same subject see *Ibid.*, No. 20, p. 384, Dec. 14, 1882.

231. *The Boston Anti-Sparrow Crusade*. *Ibid.*, XIX, No. 18, p. 345. — Reprint of a letter by Wilson Flagg to the Boston "Transcript" of Nov. 18, with an introductory note by Dr. Elliott Coues. The formation of a society for the extermination of *Passer domesticus* urged.

232. *The Pine Siskin*. *Chrysomitris pinus*. By Dr. Elliott Coues. *Ibid.*, XIX, No. 19, p. 364, Dec. 7, 1882. — General history of the species, with cut of Pine Finch and of American Goldfinch.

233. *The New Zealand Bird Nuisance*. By "M.", Wellington, New Zealand. *Ibid.*, XIX, No. 20, p. 384, Dec. 14, 1883. — The principal offender is the English House Sparrow (*Passer domesticus*) whose rapid increase and ravages are recounted. It is estimated that they annually destroy grain to the value of \$66,600.

234. *Bird Migration in the Mississippi Valley*. By W. W. Cooke. *Ibid.*, XIX, No. 20, p. 384, Dec. 14, 1883. — A digest of observations made by Mr. H. A. Kline of Vesta, Neb.

235. *Strange Hawks' Nests*. By T. S. Roberts. *Ibid.*, XIX, No. 26, p. 505, Jan. 25, 1883. — In Central Dakota, composed of buffalo ribs.

## General Notes.

PROBABLE BREEDING OF THE WINTER WREN (*Anorthura troglodytes hiemalis*) IN EASTERN MASSACHUSETTS.—Mr. George O. Welch tells me that a pair of Winter Wrens once passed the breeding season in a hemlock grove near Lynn. He first noticed them about the middle of May, when their actions led him to suspect that they were preparing to breed. During subsequent visits — which extended well into June — he rarely failed to hear the song of the male, and frequently its mate, would be seen hopping in and out among some holes under the hemlock roots. He feels sure that they had a nest in one of these holes but all his efforts to discover it proved fruitless. At length, about the 10th of June, he shot both birds, thus definitely settling their identity.

The authenticity of the above facts is open to no doubt. They do not prove, of course, that these Wrens actually nested, but such an inference is, to say the least, highly probable. Assuming it granted, the occur-

rence must still be regarded as exceptional, for the breeding-range of the Winter Wren is sufficiently well known to preclude any serious question of its availability as a "test species" of the Canadian Fauna.—WILLIAM BREWSTER, *Cambridge, Mass.*

THE WINTER WREN (*Anorthura troglodytes hiemalis*) IN WESTERN VERMONT.—In the northwestern part of the town of Brandon, lying along the bank of the Otter Creek, is a swamp some three miles in length and from one-half to one and one-half miles in breadth. Formerly this was all heavily timbered, but the timber has been largely removed and at this time but little of the "first-growth" remains; this is near the centre of the swamp. The swamp has an elevation above the sea of probably about 350 feet, and is overflowed by the creek during high water. On June 4 of last year (1882), while botanizing in the heavy "first-growth," my attention was attracted by a pair of Winter Wrens. They constantly darted in and out of a large brush-heap, scolding the while in true Wren fashion, and seemed very desirous that I should leave. A close examination of the brush-heap and vicinity failed to reveal the site of the nest. On July 4 following, I again visited the locality, and about this same brush-heap saw old birds of this species feeding young but a day or two from the nest. This of course set at rest all doubt about their breeding here. I have never seen them in summer before. In the following November I spent two days (24th and 25th) in this swamp and, to my surprise, saw a pair of these Wrens. Snow covered the ground to a depth of two inches or more, and the thermometer was but little above zero. The latest I have noted them before was the first part of October.—F. H. KNOWLTON, *Middlebury, Vt.*

TROGLODYTES AËDON PARKMANI IN KANSAS.—I have the pleasure of recording the first capture of this bird in Kansas. It was shot at Larned, Kansas, April 21, 1881, by Mr. Geo. C. Waterman (No. 3903 ♂), and identified by Mr. Ridgway.—H. K. COALE, *Chicago, Ill.*

CAPTURE OF THE GREAT CAROLINA WREN (*Thryothorus ludovicianus*) IN CONNECTICUT, IN MARCH.—A male of this species was shot here March 2, 1883, by Mr. Chas. H. Neff, and is now in his cabinet. It was in good condition—was in song and killed among the rocks on a wooded hillside.

So far as I can learn, the only previously recorded capture of this Wren in Connecticut is the one taken by J. N. Clark at Saybrook, Nov. 25, 1878 (see this Bulletin, Vol. IV, p. 61).—JNO. H. SAGE, *Portland, Conn.*

A SECOND INSTANCE OF THE WINTERING OF THE PINE WARBLER IN MASSACHUSETTS.—To Mr. Browne's recent record (this Bulletin, Vol. VII, p. 119), of the probable wintering of the Pine Warbler in this state, I can now add a second. On December 30, 1882, Mr. C. J. Maynard showed me a female *Dendræca pinus*, in the flesh, which had been killed



at Duxbury, Mass., by Mr. Chauncey W. Chamberlain, on December 27. It was found in company with Yellow-rumps (*Dendroica coronata*) which, as we now know, winter here regularly and in considerable numbers.—WILLIAM BREWSTER, *Cambridge, Mass.*

DEVELOPMENT OF A BROOD OF BLACK-AND-YELLOW WARBLERS (*Dendroica maculosa*).—My co-laborer in this field, Mr. James W. Banks, desires me to record the result of some observations made by him last season, of the rapid growth of young Magnolia Warblers. On June 26, just at dusk, a nest was discovered containing four eggs, which exhibited signs of advanced incubation, and early on the following morning one of the chicks had freed itself from the shell, while the others were on their way out. When the nest was visited on July 1, the four chicks were partially fledged and on the fourth day of the month, or eight days from the time they were hatched, two of the brood had left the nest and the remaining pair were so large they almost filled it and were nearly in full feather. While Mr. Banks stood watching them one of the chicks jumped up on the edge of the nest and fluttered off to a bush near by, and, a couple of hours later on, the nest was empty and the parent and brood were seen in an adjoining hedge.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

CAPTURE OF *ÆGIOTHUS LINARIA HOLBOELLI* IN THE LOWER HUDSON VALLEY.—Mr. Ezra Acker, on Feb. 12, killed a specimen of this large Greenland variety of the Redpoll Linnet, out of a small passing flock. The following day another was captured out of a large mixed flock of common Redpolls, Goldfinches, and Pine Linnets, specimens of each species having been killed at the one discharge of the gun. Mr. Robert Ridgway, who kindly examined the two specimens, considers them typical.—A. K. FISHER, M. D., *Sing Sing, N. Y.*

INDIVIDUAL VARIATION IN COLOR IN THE EUROPEAN CROSSBILL.—At the time my recent paper on extreme individual variation went to press, I was not aware that the European Crossbill had been shown to assume its red, yellow, and orange plumages with the same irregularity that I pointed out in our own two species. I came across a popular volume of natural history at the hotel here to-day from which I learn that this was done by Mr. Yarrell, many years ago. My author in hand, Rev. J. G. Wood, quotes Yarrell quite freely, but how the age of the birds was ascertained does not appear.

I am of course unable to learn, in this remote region, what may be the views of modern European writers as to this matter. It is sufficiently evident, however, that our own authorities either disagree with Mr. Yarrell or else have overlooked his evidence.—NATHAN CLIFFORD BROWN, *Boerne, Texas.*

THE COW BUNTING WINTERING IN MASSACHUSETTS.—On January 2, 1883, Mr. William Brewster and the writer secured two Cow Buntings (*Molothrus ater*) in Belmont, Massachusetts. Both were males, one being an adult in full plumage, the other a young bird in that mottled dress

usually seen in September specimens. They were feeding in company with Redpolls (*Ægithus linaria*) and Goldfinches (*Chrysomitris tristis*) among some rank weeds in an old field. Their crops were filled with seeds. The ground, at the time, was partially covered with snow and the weather cold. There is, apparently, no previous record of the occurrence of this species in winter, in Massachusetts.—HENRY M. SPELMAN, *Cambridge, Mass.*

AN UNUSUAL INFLUX OF THE THREE-TOED WOODPECKERS (*Picoïdes arcticus* AND *P. americanus*) INTO EASTERN MASSACHUSETTS.—I am indebted to Mr. George O. Welch for the following interesting notes. Some time in the summer of 1860 a fire swept through a piece of heavy white pine timber in Lynn, killing most of the trees. In the natural course, of events the charred trunks became infested with wood-borers, and during the following winter (1860-61) the place was a favorite resort of various kinds of Woodpeckers. In what manner the news of the feast was advertised in the remote forests of the North is not explained, but certain it is that with the first cold weather both species of *Picoïdes* appeared on the scene. Of *P. americanus* only three specimens were actually taken, a female by Mr. Welch, and a fine pair by Mr. N. Vickary. *P. arcticus*, however, was actually abundant, and remained through the entire winter. Mr. Welch often saw as many as six or eight during a single visit to these woods, and numerous specimens were killed and preserved. Most of the individuals seen were females, the yellow-crowned males being comparatively rare. Since 1861 only two Three-toed Woodpeckers (both *P. arcticus*) are known to have been taken in Lynn.

There is nothing novel in the fact of these Woodpeckers assembling in numbers in a tract of recently-burned timber; indeed *Picoïdes arcticus* is rather notorious for this habit. But how the knowledge of such an attraction could have been conveyed so far as it must have been in the present instance is little short of marvellous. We commend the problem to the attention of those ornithologists who refuse to believe that there is anything "mysterious" in the periodical movements of certain migratory birds.—WILLIAM BREWSTER, *Cambridge, Mass.*

THE BARN OWL IN CANADA WEST.—Mr. T. McIlwraith, of Hamilton, informs me of the capture of *Aluco flammeus pratincola* in that locality on the 9th of May, 1882. The bird is new to that place, if not to Canada.—ELLIOTT COUES, *Washington, D. C.*

CAPTURE OF RICHARDSON'S OWL (*Nyctalu tengmalmi richardsoni*) NEAR PROVIDENCE, R. I.—A beautiful male specimen of this species was taken east of this city and brought to us by a milkman, Dec. 18, 1882. As it passed through several hands before reaching us we could not ascertain just where it had been killed, but think it must be accredited to Massachusetts, as it was in all probability taken in Seekonk, where the man lives who brought it to us. As the Massachusetts line runs but two miles east of this city, this is almost beyond doubt a Massachusetts record.—F. T. JENCKS, *Providence, R. I.*

CAPTURE OF THE GREAT GRAY OWL IN MASSACHUSETTS. — Under date of Feb. 25, 1882, Mr. Robert O. Morris, of Springfield, writes me that "a Great Gray Owl (*Syrnium cinereum*) was captured in Agawam last week, the skin of which has been preserved." A later letter, in reply to a request for further information, states that the capture was made by Mr. E. A. Kellogg, on February 21, and that Mr. Kellogg's attention was attracted to the bird by a number of Crows circling around a pine tree on a branch of which the Owl was sitting. Length of the specimen, 28 inches; extent, 60 inches; tail, 13.

Only two specimens have been recorded as positively known to have been taken in this State in the last forty years, but there are several earlier records.—J. A. ALLEN, *Cambridge, Mass.*

RECENT OCCURRENCE OF THE FLAMMULATED OWL IN COLORADO. — Writing under date of October 25, 1882, Mr. C. E. Aiken sends me the following interesting note: "I have two specimens of *Scops flammeolus* to record from Colorado. One—a young bird in the nestling plumage—was taken about the middle of September in a creek bottom between Colorado City and Manitou. The person who brought it to me discovered it, about dusk; sitting on the dead twig of a plum bush under a group of cottonwoods, and going up to it seized it in his hands. Ascertaining the exact locality, Mr. Nelson and I looked the ground over carefully next evening hoping to find others of the same brood, but we saw none. I regard the occurrence of this specimen as a very interesting one, for it was doubtless bred in the immediate vicinity. The locality is quite different from the one where my own capture was made, which was on a rocky hillside covered with pines, and at an elevation of about 7500 or 8000 feet.

"The second recent specimen was found dead on the ground near the San Louis Lakes and Mosca Pass in the San Louis Valley. This is precisely the same locality where my friend Dr. Walbridge shot one four years ago. The present bird was found by friends who had seen the Doctor's specimen and who sent it to me for identification last week. It was in perfect autumnal plumage, but had been dead so long that I could only make of it an indifferent skin."

It is perhaps necessary to explain that two of the four specimens mentioned above have been already announced in this Bulletin; Mr. Aiken's in Vol. IV (p. 188) by Mr. Deane, and Dr. Walbridge's in Vol. V (pp. 121, 122) by Mr. Ingersoll. In addition to these records there is also one by Mr. Ridgway\* of a specimen taken at Boulder by Mrs. Maxwell. Accordingly we now have knowledge of five Colorado examples of this rare little Owl. — WILLIAM BREWSTER, *Cambridge, Mass.*

CAPTURE OF THE GOLDEN EAGLE AT ALBANY, N. Y. — On the 15th of February of the present year, I secured a fine adult male Golden Eagle, captured in this vicinity a short while previously by a hunter, by whom it was kept in captivity for some time. The Eagle, although not seriously

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\*"Field and Forest," June, 1877, p. 210. See also this Bulletin, Vol. V, p. 185.

or painfully injured, utterly refused all food until, in a moment of passion, he flew at his captor, who had barely time to strike a blow with a heavy stick which he had with him. Fortunately for the hunter the blow was fatal, and in this condition the late "monarch of the mountain forests" was brought to me. Owing to sickness, I was unable to prepare the Eagle myself, and so sent it to Mr. C. J. Maynard to be mounted for my collection. — G. A. LINTNER, *Albany, N. Y.*

WINTERING OF SORA RAIL AT THE NORTH. — Mr. L. S. Ward of Rochester, N. Y., writes me that he received a female *Porzana carolina* caught in his vicinity on Dec. 12, 1882. The bird was brought to him by a farmer who said that while hunting rabbits with a ferret on his farm, which is watered by a creek where Rails abound in season, this bird was driven from a hole in the ground. "It seemed to be in a partially torpid condition, and was easily caught as it crouched on the ground." This was nearly in the midst of winter, with cold weather and plenty of snow and ice. On skinning the bird it proved to be much emaciated. While I do not wish this paragraph to be held up in evidence that I believe that Rails hibernate in the mud, or even turn into frogs, the circumstances of the case seem quite worthy of record. — ELLIOTT COUES, *Washington, D. C.*

NESTING HABITS OF THE CANADA GOOSE (*Bernicla canadensis*). — In view of the various statements made in regard to the nesting of the Canada Goose in the Northwest, I will briefly give the results of three seasons' observations on the Upper Missouri, Yellowstone, and Big Horn Rivers in Montana. Just how far down the Missouri River their breeding range extends, I am unable to say, but from the mouth of the Yellowstone, up both rivers, pairs are very often seen as one ascends the streams.

These Geese usually arrive in Montana early in March, and many of them are paired at that time; by the first of May the nests contain the full complement of eggs, generally five in number.

Some of the published accounts would lead one to infer that this Goose commonly and habitually nests in trees, but this, in the region I now refer to, is by no means the case. Their favorite nesting sites are on the numerous low sandy islands in these rivers, covered in the higher parts with a growth of young willows. Among these the pair scratch a slight hollow in the sand, around which they place a few sticks and twigs, the eggs being separated from the ground by a layer of gray down furnished by the parents. Occasionally the nests are placed on the banks among high grass or on piles of drift-brush, but this is uncommon, as few nests would escape the ever present coyoté. One nest was made on top of a pile of brush that had collected in the top of a fallen tree that had floated down and lodged near the middle of the river, — a very conspicuous place but quite safe from four-footed enemies. I have also known a pair to nest on a rocky ledge about three hundred yards from the river, and this nest was occupied for several successive years.

When these Geese nest among the branches of a tree, I do not think they ever construct the nest entirely themselves, but take possession of a deserted nest of the Fish Hawk and repair it with twigs and a lining of down. They have been seen to carry small sticks to the nest for this purpose. The nest may also be placed upon the top of a stump or broken trunk of a tree, especially if surrounded by a growth of young sprouts.—J. C. MERRILL, *Fort Custer, Montana Ter.*

*LARUS GLAUCESCENS* IN THE BAY OF FUNDY.—Mr. George O. Welch of Lynn, Mass., has shown me a Glaucous-winged Gull which was shot by a fisherman in the Bay of Fundy about November 1, 1881. It is an adult in winter plumage with the mantle immaculate, but the head and neck flecked with dusky, as in adult Herring Gulls taken at the same season. The sex, unfortunately, was not ascertained.

This specimen, I believe, is the first that has been taken on the Atlantic coast south of Cumberland Sound, where Mr. Kumlien found the species numerous and breeding during the summer of 1878.\* Previous to this discovery *Larus glaucescens* was supposed to be confined to the Pacific Ocean; the inference now is that it may occur almost anywhere along our Atlantic seaboard, as far to the southward, at least, as the Bay of Fundy. There is little doubt that it will be eventually added to the fauna of New England if, indeed, the specimen announced by Mr. Merrill in the following note may not be properly regarded as establishing such a claim.—WILLIAM BREWSTER, *Cambridge, Mass.*

AN OCCURRENCE OF *LARUS GLAUCESCENS* AT GRAND MENAN, N. B.—One of my collectors wrote me from Grand Menan, under date of Jan. 21, 1883, that among a lot of birds he had sent me was a "Jay Gull" which he said was *very rare* in that locality. With much interest I awaited its arrival, and, on examining the specimen referred to, was convinced that it was an example of *Larus glaucescens*, and this conviction has been verified by the kindness of Mr. William Brewster, who has recently examined a specimen which was procured near the same locality. My specimen is a beautiful adult male in full plumage, and was shot south of Grand Menan. Length, 23.75; wing, 17.50.—HARRY MERRILL, *Bangor, Maine.*

THE WHITE-WINGED GULL (*Larus leucopterus*) IN MAINE.—I have lately purchased of Mr. N. Vickary a pair of White-winged Gulls which were sent to him in the flesh from West Sullivan, Maine. One is a young bird in its first autumnal plumage; the other is passing from the immature into the adult dress. They were received by Mr. Vickary sometime in January, 1883.—WILLIAM BREWSTER, *Cambridge, Mass.*

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\* See Bull. U. S. Nat. Mus., No. 15, 1879, pp. 98, 99.

WINTER BIRDS IN NEW BRUNSWICK. — Several correspondents have asked me if anything has been observed in this locality that would help to account for an unusually large number of boreal birds having visited more southern points during the season that has just passed, but I have failed to find any reason for such an occurrence; for, so far as I can gather from personal observation, and from correspondents in the northern sections of the Province, the usual species have been seen here and in much the same numbers as in former seasons. The Snow Buntings came along about two weeks earlier than they have been noticed for several years, and of the Pine Grosbeaks observed, a larger proportion perhaps have been in the red phase of plumage. Food of all kinds has been as plenty as usual; indeed, the Raptorial species have had a better chance than usual to capture the small rodents, as the fall of snow has been extremely light. But no increase of these birds has been noticed.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

SOME ALBINO IN THE MUSEUM OF THE PHILADELPHIA ACADEMY.—Among the numerous albinistic birds in the Academy's collection, some species are represented in which I believe this peculiar whiteness has not yet been noticed. There is a perfect albino Merganser (*Mergus serrator*); a Magpie (Yellow-billed?) in which the dark parts are replaced by coffee-color; two Red-head Ducks (*Fulix ferina americana*) that have the head and neck white; two specimens of the Canada Goose (*Bernicla canadensis*) that have the black of the head and neck replaced by white; and a Black-poll Warbler (*Dendroica striata*) in which the entire plumage is suffused with white.

Of those already recorded, we have perfect albino specimens of the Chewink (*Pipilo erythrophthalmus*) and the Kingbird (*Tyrannus carolinensis*), and a Red-tailed Hawk (*Buteo borealis*) from Delaware Co., Pa., which is white, with the exception of the tail, which is of the usual red color.

Melanism is exemplified by a handsome specimen of the Meadow Lark (*Sturnella magna*) from New Jersey. The upper plumage is of the normal color, while the whole head, neck, and under parts are perfectly black. There is the faintest possible trace of yellow along the sides, and no white feathers in the tail, which is very dark above and below.—CHAS. H. TOWNSEND, *Acad. Nat. Sciences, Philadelphia, Pa.*

A LETTER FROM AN OLD-TIME ORNITHOLOGIST.—[The following letter, written about eighteen months before Dr. Kirtland's death, seems of sufficient interest to be worthy of publication.—EDD.]

CLEVELAND, O., MAY 22, 1876.

MR. H. A. PURDIE, SEC'Y N. O. C.,

DEAR SIR. Yours of the 15th inst. informing me that I was elected a corresponding member of "the Nuttall Ornithological Club of Cambridge," was duly received. It found me at 83 years of age, confined to a sick room, with no very favorable evidences of any improvement of

health, and at the same time so much enfeebled that it is with difficulty that I can command my pen and mind sufficiently to respond to your communication.

Please tender my acknowledgements to your Society for the honor they have conferred on me and accept personally my thanks for your kind attentions. Should sufficient betterment ever permit, it will afford me pleasure to hold further correspondence with you. It is possible I might afford you some facts of interest, bearing on the pursuit of your Association.

Ornithology has engaged my attention through a long life. In the year 1810 I taught a district school, in a log-house, in Poland, Trumbull County, Ohio, and from that period to the present have carefully watched and studied the habits of her birds.

Few persons are aware, at this day, of the numerous and extensive changes which have occurred, not only among her birds but in all of the departments of nature, during her transition from a heavy Forest state to a thickly populated territory, changes as prominent as those which mark the boundaries between the Geological periods in pre-historic times.

Then the Turkey Buzzard, by hundreds, swarmed about the carcasses of all dead animals during summer, and frequently nested in the forests along the Mahoning and Big-Beaver Rivers. It is many years since I have seen a solitary specimen in this section of country.

Then the Swallow-tailed Hawk, in flocks of a dozen or more, might occasionally be observed, reconnoitering over fields of dead and girdled timber and diving down to capture Garter Snakes, then numerous in all of our partially cleared fields. This beautiful bird is no longer within the boundaries of Ohio.

Then many species of Ducks and other water birds bred in great numbers in every part of Northern Ohio, then known as *New Connecticut* or the *Connecticut Reserve*. During the spring and autumn season, every lake, pond, river and creek were crowded with numerous flocks of migrating water birds. Now it is a rare event to meet with even a solitary individual.

Then the Parroquet was very common in the Miami & Sciota valleys, and occasionally were seen in numerous flocks as far north as the shore of Lake Erie. Not a solitary bird of this species has perhaps been seen within the State during the last thirty years.

On the other hand many other species, formerly rare or unknown here—especially smaller kinds, are now abundant.

Within the last week the English Sparrow has for the first time visited my premises, five miles West from Cleveland, in which city it was first introduced five or six years since and has now become there very numerous.

Very respectfully Yours,

J. P. KIRTLAND.

EGGS OF BRITISH BIRDS IN EXCHANGE FOR EGGS OF AMERICAN BIRDS.—[As being possibly of interest to some of our readers, Professor Baird has transmitted the following letter for publication in the Bulletin.—EDD.]

CLAVERING PLACE, NEWCASTLE ON TYNE,  
13 DECEMBER, 1882.

DEAR SIR:—

I take the liberty of writing you, believing that you will not be averse to helping Natural History students, in whatever branch. I am a private collector of British Birds' Eggs, and get a large series of clutches through my hands yearly, collected here and in Scotland, Europe, etc. Can you oblige me with the names of a *few* gentlemen in the States who are also *private* collectors, who would be likely to be willing to exchange eggs? Any American list would do as a basis to work upon quite well for me. I should esteem it a VERY great favor if you will put me in communication with one or more such gentlemen. I should prefer one who gets a large series of eggs through his hands yearly, if possible, because I should like a pretty large series of eggs of the birds common to America and England, and am in a position to offer a large series of British eggs in exchange. All, of course, prepared in a first class manner, with full particulars as to locality and date of collection. Awaiting your reply,

I am, Yours truly,

To Professor Baird, Esq.

A. W. JOHNSON.



# BULLETIN

OF THE

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### BIRDS OF THE LOWER URUGUAY.

BY WALTER B. BARROWS.

(Continued from p. 94.)

25. **Paroaria cucullata** (*Lath.*). CARDINAL COLORADO (RED CARDINAL).—This is the bird familiar to many as a cage-bird under the name of Brazilian Cardinal. It is said that the market is mainly supplied by the netting of the birds in lower Brazil and Paraguay.

As they are commonly found in large flocks, are quite unsuspicious, and feed much on the ground, it would seem easy to catch them in nets, but I have never seen it done. The sexes are equally brilliant and not distinguishable by color, so I do not know whether the females sing or not. The species is abundant wherever any considerable extent of woods remains, and undoubtedly it nests near Concepcion, but I did not have proof of it further than that implied in the presence of the birds in undiminished numbers through the warm weather.

26. **Poospiza nigrorufa** (*Lafr. et d'Orb.*).—One of the commoner Finches of the country, abundant everywhere in wet, bushy ground, and often seen scratching among the leaves like a Chewink (*Pipilo*). Its cheery and often repeated little song is so constantly heard that one hardly notices it more than the droning of the cicadas or the chirping of the grasshoppers;

yet there is a good deal of real music in it. Although I not unfrequently saw young unable to fly, I could never find the nest, but was convinced that it must be placed on the ground, at least normally.

27. **Poospiza lateralis** (*Nordm.*).—A single specimen of this species was taken at Concepcion, September 29, 1879. It was in company with another individual of the same species and several of the preceding. During the summer following I looked in vain for others, but late in the autumn (April 23), while hunting capybaras on a stream about a dozen miles west of this place, several were observed. As our charges at the time were of buckshot none were secured. The following September, when I was on the lookout for this bird, almost all the favorable ground was flooded, and I only caught a glimpse of one on a nearly submerged island among impenetrable thickets where he escaped the shot.

The species seems to be but slightly known, and would appear to be only migrating at the points mentioned.

28. **Poospiza melanoleuca** *Vieill.*.—Although much better known than the preceding species, this bird was far from abundant at Concepcion. It was only met with in autumn on one or two occasions, and was found then among scattered trees and bushes on high ground, and in company with *Synalaxis*, *Zonotrichia*, and some Gnatcatchers.

It had the general motions and appearance of a Titmouse, thus differing widely from the other members of the genus.

During the trip to the Sierras of the Pampas, and while in camp on the Pigué, about 25 miles from the town of Carhué, a *Poospiza* was taken which appeared to be another species (possibly *torquata*), but it was moulting and was unfortunately afterward lost.

29. **Phrygilus caniceps** (*Burm.*).—Only met with in the Sierra de la Ventana, where it was abundant in flocks, some of which numbered as many as a hundred individuals. When found near the base of the sierra they were almost always associated with the common *Zonotrichia*. Although most of them had not finished moulting, they were constantly singing and seemed perfectly contented with their desolate surroundings.

30. **Gubernatrix cristatella** (*Vieill.*). **CARDINAL AMARILLO** (YELLOW CARDINAL).—This is another well known cage-

bird, but less common than the Brazilian Cardinal, with which it is often associated, both in freedom and captivity. It is said to gather in flocks to the number of several hundreds, but I have never seen more than three in company, and in such cases the adage seemed to be verified,—“Three’s a crowd.” As there is no trace of red on the bird the name Yellow Cardinal can hardly be justified except on the ground that it is “the *name* of the thing.”

31. **Diuca minor** *Bp.*—A common bird among scattered bushes or thickets in comparatively open ground. It disappears during the coldest weather, but makes its appearance again in little flocks late in July or early in August. These soon scatter, and through the summer the male is commonly heard chanting a rather short and not particularly pretty song from the top of some low bush or from a fence post. The nest and eggs were not taken.

32. **Zonotrichia pileata** (*Bodd.*). CHINGOLO; CHINGOLITO.—By far the most familiar if not the most abundant bird of the family. It is resident through the year at Concepcion, and also much farther south. It spends most of its time on the ground, but I think is never met with in any numbers at a distance from shrubs or trees of some kind. The nest is built on the ground, usually under a tuft of grass, a thistle, or almost anything which will conceal it. In one case I found it placed within and beneath the battered rim of an old tin pan beside the road. Three eggs are usually laid, seldom four, and never, to my knowledge, more; but the Cowbird (*Molothrus bonariensis*) usually adds one or two more and sometimes even four or five. More than half the Sparrows’ nests found contained eggs of the Cowbird, and quite frequently I found them deserted, evidently from that cause. The earliest nest found was October 4, and from that time until late in December they were constantly noticed, sometimes a half dozen in a morning’s collecting.

Undoubtedly two broods are reared by many of the birds if not all. The eggs vary widely in color, but the ground-color is always bluish-green, sometimes sparingly and irregularly spotted with coarse markings; at other times profusely and evenly sprinkled with minute dots, the markings being different shades of brown.

33. **Coturniculus manimbe** (*Licht.*).—It was not until a

year had been spent at Concepcion that I found this species there. Possibly it had been overlooked, as all the specimens subsequently taken near this place were found in cultivated ground, several being shot while perched on sheaves of wheat and in full song. This was at Christmas time, 1880. Two months later we found it abundant in similar places near Bahia Blanca, as well as on the grassy slopes at the foot of the Sierra de la Ventana. At all these places it was breeding, but nothing was learned of its nest or eggs.

34. **Embernaga platensis** (*Gm.*).—A common resident at Concepcion, where it breeds. Also numerous in suitable localities at all other points visited. It prefers damp ground with or without bushes, and where the plumed pampas-grass abounds the bird delights to sit swaying on its feathery tips, chanting his weak but well-meaning song. The nest is placed near or on the ground and contains three white eggs with a very few dark flecks at their larger ends. Sets were taken at Concepcion, October 12 and December 7, and at Azul, January 28, indicating a second and perhaps a third brood.

35. **Chrysomitris barbata** (*Mol.*). JILGUERO (GOLD-FINCH).—I first made the acquaintance of this sprightly little songster in the markets and bird-stores of Buenos Aires where they are kept by hundreds as cage-birds. Afterwards I found them more or less abundant at all points visited. Like our common Yellowbirds, they are almost always in flocks, always restless, and able to sing well when they feel like it. Nothing was learned of their nesting habits.

36. **Sycalis luteola** (*Sparm.*). MISTO or MIXTO. (MIXED, perhaps in allusion to the character of the flocks).—Abundant everywhere in immense flocks, often of many thousand individuals, and largest in winter, when they are shot by the hundred and sold in the markets of Buenos Aires. Other species often help to swell the size of these flocks, *Chrysomitris* perhaps most often, and then *Zonotrichia*, *Spermophila*, and even *Anthus correndera*. Nests were found during November, December, and January, and probably many breed during October. The nest is very variable in size, material and location. Probably it is oftenest placed on the ground, but I have taken eggs from a well-built nest of the Oven Bird (*Furnarius*) ten feet from the ground, and was told by natives that the bird often nests in

hollows of fence posts or of trees and stumps. The eggs are nearly white, spotted pretty finely and evenly with brown, and are commonly five in number. This species seems to have no song even during the breeding season.

37. **Cassicus solitarius** (*Vieill.*). BOYERO (COW-HERD. The significance of this name here is not obvious; I suspect, however, that it was originally given to the Cowbird (*Molothrus*), and the present species being entirely black has been confounded with that bird).—Only a single specimen taken (Concepcion, October 12, 1880), but one or two other individuals were seen at about the same time. It is said to be much more abundant a little further up the river and in sections where the heavy swamp forest has not been cleared. According to these persons the song is very rich and beautiful, and I was often assured that single birds were worth as much as ten dollars in Buenos Aires.

An allied species, *Scaphidurus ater* (*Vieill.*), was not uncommon as a cage-bird. It is found along the Upper Uruguay, but has not yet been detected as far south as Concepcion.

38. **Icterus pyrrhopterus** (*Vieill.*).—Like the preceding, and with equal inaptness, called Boyero or Boyerito (Little Cow-herd).

This species is not abundant, yet was frequently met with, and seems to be resident at Concepcion through the entire year. They commonly go in pairs, were never seen on the ground or far from the swamps, and hang in any position while feeding on insects or berries. I do not recall ever having heard one sing, but have seen them caged, and they are credited with a fine song. A nest found December 20, 1880, contained three nearly fledged young. It was pensile, but only about as deep as broad, was neatly woven of fine yellow grass, and suspended among the topmost twigs of a small mimosa at a height of about fifteen feet from the ground. The eggs I did not see.

39. **Molothrus bonariensis** (*Gm.*). TORDO (THRUSH, possibly so called because the European Blackbird (*Turdus merula*) is sometimes so called in Spain, and the present species resembles it in color. It seems probable, however, that the name Tordo belongs to *Cassicus solitarius*, and the name Boyero, by which that is known, to this species.)

The common Cowbird abounds at Concepcion through the year, but is rather less abundant in May and June than at other

times. In general habits it is precisely similar to *M. ater*, and the eggs of the two birds are scarcely distinguishable. I am inclined to think that the Argentine bird differs less from our own in its parasitic habits than is generally supposed. Its great abundance and the comparative openness of the country will in great measure account for the larger number of eggs found as well as for the numbers sometimes observed in single nests. The largest number I ever found in any nest at one time is four, but not very rarely twice that number is found, as witnessed by many reliable observers. Of course this overdoes the matter so as to compel the rightful owner to desert the nest, but I suspect our own Cowbird would be no wiser under similar pressure.

40. ***Molothrus rufo-axillaris*** *Cass.*—Much less common than the preceding, and usually met with only in the woods or close to them. Here little parties of ten or a dozen may be found at any season. Although so common, I was not able to satisfy myself by observation either that they did or did not build nests for themselves or impose on other birds. I have frequently seen them in small parties clambering about the bulky nests of different species of *Synallaxis*, and occasionally even entering such nests as if they owned them; but examination afterward never revealed eggs of any kind in the nests, so that I was at a loss to account for the proceeding. Twice I have found in the nests of *Zonotrichia pileata* a good sized white egg (in one case spotted, in the other immaculate) differing in size, shape, and color from the average egg of *M. bonariensis*, yet I am not ready to say that these were not abnormal specimens laid by that species. As I have never seen the eggs of *M. rufo-axillaris* I can of course draw no conclusions in that direction, but suspicion naturally falls on any member of a disreputable family who has not proved an alibi.

41. ***Agelæus thilius*** (*Mol.*).—Abundant in flocks through the year, but the flocks seldom consist of more than fifty individuals, oftener of only a dozen. Breeds in the marshes during October and November, but rather sparingly; probably the majority breed farther south. The male in spring has a low but sweet and varied song.

42. ***Xanthosomus flavus*** (*Gm.*).—During the first year spent at Concepcion this species was not observed, but in October, 1880, it made its appearance in flocks and remained to

breed. About a dozen pairs nested near each other on low bushes in a very wet marsh. The nests were rather bulky, made of weed stalks, grass, etc., and contained three or four eggs each, white spotted with brown. The eggs were laid about the third week in December, and with them were found many Cowbird's eggs.

Late in March, 1881, we found this species in large flocks on the Pigué, and it was a beautiful sight to see a hundred or more fluttering about among the snowy plumes of the pampas grass and displaying their rich black and yellow dress. Unlike most other birds obtained at that time, their plumage seemed nearly as bright and fresh as in summer.

43. **Amblyramphus holosericeus** (*Scof.*).—Found rather sparingly at Concepcion, but resident through the year and breeds. The birds are found singly, or at most in pairs, frequent swamps and marshy ground, and are remarkable for their clear, penetrating, bell-like call, which may be heard at least half a mile, yet sounds hardly louder when heard at a distance of a dozen yards. The feathers of the head, neck, and tibiae are of the most brilliant scarlet, while the rest of the bird is lustrous black. The sexes are alike in size and color, and a young female only a day or two from the nest showed many red touches about the head. Of the nest and eggs I am ignorant; the young bird just mentioned was taken December 24, 1880.

44. **Pseudoleistes virescens** (*Vieill.*). PECHO-AMARILLO (YELLOW-BREAST).—No bird of the family is better known to the average Argentine than the Pecho-amarillo. Every rush-bordered pool or stream and every acre of long, coarse grass has its colony of these birds, and in the breeding season they go back and forth in troops, laden with building materials and apparently as unmindful of man and beast as the grass amongst which their nests are built. Some nests were begun as early as the middle of August, and on October 2 an unfinished nest and one containing nearly fledged young were found side by side. The nest is a substantial structure of reeds, grass, and sometimes mud, lined with fine grass and built into and around the grass stems so as to leave it at least a foot or two above the mud or water. The eggs are four or five in number, white, heavily marked with brown, often making them appear clear chocolate-colored. Two broods are usually reared.

45. **Leistes superciliaris** Bp. PECHO-COLORADO (RED-BREAST).—My attention was first called to these birds by a somewhat odd habit of the males soon after their arrival from the north early in October. They rise quickly and silently by vigorous beats of the wings to a height of fifty or sixty feet, when they suddenly spread the wings and glide slowly down to the ground again, at the same time giving vent to a wheezy little song, which suggests the idea that the exertion of the ascent has left very little breath for vocal exercises. The wings are not moved at all during the descent until within a few feet of the ground. This exercise is repeated once in every two or three minutes, sometimes for hours together, and the sight is very pleasing when, as is usually the case, the birds are quite numerous. The nest is placed on the ground and the eggs are spotted. The only set taken was found December 20, 1880, and consisted of four fresh eggs. The birds are only found in open, wet, grassy places, and while many pairs may be found in the same meadow or field, they never seem to be truly gregarious, even after the nesting season is over.

46. **Sturnella defilippii** Bp. PECHO-COLORADO (RED-BREAST).—Not found at Concepcion at all, nor was it met with until reaching Azul. At this place and further south it seems to replace the preceding species and bears the same name. It was seen nearly every day during our trip to the Pampean Sierras, and only parted company with us at Puan after several severe frosts. At the last-named place the flocks frequently numbered several hundred individuals, and during the whole time of our acquaintance with it it was always seen in large but scattering flocks.

47. **Cyanocorax pileatus** Temm. URRACA (in imitation of its usual call-note).—Confined to the islands in the river and to the deep woods along the shores, where it is resident through the year. Even in such places it is no longer abundant, and very few specimens were obtained.

The following twelve species, belonging to the sub-family *Fluvicolinæ* Cab. (*Tæniopterinæ* Bp.), form one of the most interesting groups found in the Argentine Republic. To almost all the general habits of Flycatchers they add others peculiarly their own, some of which are not readily explainable.



Not one of them has bright colored plumage, if we except the sulphur-yellow under-parts in two species (*Sisophygis* and *Machetornis*) and a half concealed crown-patch of orange-red in *Machetornis*; yet almost every one possesses some characteristic of form, color, or habit, which makes it conspicuous even to the casual observer. Well-defined areas of black and white mark several species, while peculiarly developed outer tail-feathers, or remarkable eye-lids characterize two others.

48. **Agriornis maritima** (*Lafr. et d'Orb.*).—Only met with a few times in the gorges of the Sierra de la Ventana, where it was sometimes seen perched motionless upon a great block of gneiss, or darting suddenly out after a passing insect.

49. **Tænioptera nengeta** (*Linn.*). ALCAHUETE (a word which unfortunately has no precise equivalent in English, but which, as it refers to the remarkable vigilance and quickness of the bird, may be very liberally translated *sentinel*.)

These birds and the following species (*T. coronata*) appear at Concepcion at the first appearance of cold weather, and remain until spring opens. They are most abundant between April 1 and August 15, but possibly a few of the present species remain through the summer, as a single one was taken September 8, and another on February 11.

They are commonly seen perched on fences or the tops of bushes or trees in open ground, frequently making sallies for winged insects, or dropping to the ground to catch a grasshopper or worm. When shot at while perched and watching you, they almost invariably leave the perch at the flash, pitching forward and downward and usually evading the shot even at short range. Several times I have secured them by shooting about a foot below and two feet in front of them as they sat, but they do not always fly in this direction. Much the surest way of dropping them is to walk up till they fly, and then shoot, as they seldom dodge while on the wing. The rapidity of their flight when frightened, or when quarreling, is simply astonishing. I have seen one chase another for three or four minutes, doubling, turning, twisting and shooting, now brushing the grass and now rising to a height of at least two or three hundred feet, and all the movements so rapid that the eye could scarcely follow them; and at the end of it each would go back to the top of his own chosen weed-stalk, apparently without a feather ruffled.

50. **Tænioptera coronata** (*Vieill.*).—The preceding description is applicable to this bird except that I did not note its presence at Concepcion after September 1 until the following April. This species frequently persecutes smaller birds in a way which seems to imply pure love of mischief. One afternoon in July, when the river had fallen some feet after an unusual rise, I was walking along the lines of drift left by the falling water, and watching the different birds which were picking up insects or other food from the windrows. A score or two of the little chestnut-backed *Centrites* were running about, and here and there a *Tænioptera* was looking quietly on. Suddenly I heard a chirp of distress, and looking up saw one of these small birds apparently making every effort to escape from a *Tænioptera*, which was following in full chase. The two birds were hardly a length apart and both going at full speed, doubling and dodging in a way that would have done credit to a bat. The chase lasted perhaps half a minute when the smaller bird alighted and at once the other also alighted and began running about unconcernedly and picking up food. But the instant the smaller one made a start, his enemy was at his heels (or more properly his tail) again, and he was forced to alight. This was repeated so often that I was on the point of shooting the pursuer, when without any notice he flew quietly off and resumed his usual demeanor. Afterwards I saw the same proceeding quite frequently—the tyrant being in every case *T. coronata* (except once when I think it was *nengeta*), but the victim was personated at different times by certainly four or five different species; all small, but all very strong on the wing. So far as I could judge, the pursuer never actually touched the pursued; nor did he ever appear to stop, or pick up anything which the other might have dropped. It looked like a case of simple spite, for even if there were twenty other birds about, one seemed to be selected and followed without regard to the rest. Moreover, neither species was nesting, for this occurred in mid-winter, and while the *Centrites* was in flocks, and if it were only from pugnacity there would seem to be no reason why other birds should not share in the attention.

My only explanation is that it was an *amusement* in which the larger bird indulges simply for the pleasure derived from the exercise of his power.

What becomes of these birds in summer I do not know. None were met with on the pampas during our trip, though another species (*M. rufiventris*), which only visits Concepcion in winter, was abundant about the Ventana in March.

51. **Tænioptera dominicana** (*Vieill.*). — At Concepcion this bird does not occur. It was first seen as we approached the Pampean Sierras. Here among the stalks of the drying thistles, or on the tops of the beautiful pampas grass, it was frequently seen. It has an undulating flight which, taken in connection with its black and white dress, at once suggested a Shrike in unusually fine plumage. At this time (February 4, 1881) they were only seen in pairs or little family parties, were almost silent, and in ragged plumage; but late in March, on the Pigué, we found them in large, scattering flocks, which collected in one place toward evening, and went through with a series of aerial evolutions accompanied with vocal exercises of a varied and entertaining kind, lasting half an hour or more.

I presume this was in preparation for their northward (or westward?) migration, as we did not see them again after leaving this spot, though equally favorable localities were visited.

52. **Tænioptera irupero** (*Vieill.*). VIUDA; VIUDITA (WIDOW; LITTLE WIDOW). — The snowy plumage of this little bird, only the outer wing feathers and the tip of the tail being black, makes it one of the first birds noticed in going into the country. The name Little Widow, by which it is everywhere known, is very appropriate, though the black edgings are not very conspicuous at a little distance, and I have been frequently assured by sportsmen and even by *gauchos* that there was a bird on the pampas called Novia (Bride) which was of milky whiteness without a single touch of other color.

At Concepcion this species is resident through the year. It was not met with further south than Azul, but at Carhué I heard of the "Novia" as a common bird in summer.

The nest is built very early in the season, often, I think, by the middle of August, judging from the condition of old birds taken then. On August 30, 1880, I saw a pair building a nest, largely of feathers, in the hollow limb of a dead tree, and I afterwards saw others in similar places. I never saw the eggs but was told that they were pure white and unspotted. From statements from another source I had reason to believe that the

eggs were sometimes spotted. The sexes are precisely alike in color, and the young when able to fly differ but slightly in appearance from the parents. From the fact that young unable to fly were taken in November, I judge that a second brood is not infrequently raised. The adults have several of the first primaries remarkably attenuate. Young birds appear to acquire these attenuate primaries only after a complete moult. But I took one specimen which showed one or more primaries with tips of ordinary shape but with a line apparently *worn* into the vane of the inner web so as to mark out distinctly the attenuate tip, and it seemed as if a little more wearing would cut out a piece which would leave the primary as in the old bird.

53. **Myiotheretes rufiventris** (*Vieill.*).—The largest of the family found at Concepcion, where it occurs only in winter. It is found in flocks, the individuals of which scatter about the ground and resemble our common Robins not a little. I have never seen this species alight on a bush or tree,—but as it is not plenty at Concepcion, and as there were no trees or bushes in the region where it was abundant further south, I will not say that it does not often do so.

54. **Alectorurus guira-yetapa** (*Vieill.*). TIJERITA REAL (ROYAL SCISSOR-TAIL).—Only sparingly found at Concepcion, and only during warm weather, when it probably breeds. The remarkable condition of the outer pair of tail feathers is interesting. In the male these two feathers reach a length of nearly ten inches, the rest of the tail being about three inches in length. The vane on the *inner* side of each is wanting for the first two inches and then suddenly develops to a width of nearly two inches, which it maintains almost to the tip when it gradually narrows. The vane on the *outer* side of the shaft is only about one-quarter of an inch wide, and is folded so tightly against the shaft that it is quite inconspicuous. In the only two males of this species which I have seen flying, these long feathers seemed to be carried folded together *beneath* the rest of the tail, and stretching out behind like a rudder or steering-oar, their vanes at right-angles to the plane of the rest of the tail. The only male which I took myself was shot at Carhué, April 6, 1881, and had not quite completed the summer moult. The chin, throat, and sides of head below the eyes were completely feathered. Two males, however, were brought to me at Concepcion, October 7,

1880, which had these parts perfectly bare, and of a bright orange-red color. As this was the breeding season I can only suppose that the feathers are lost from these parts at that time, and not regained until the entire moult takes place. The birds seem to prefer high grass and weeds in wet open ground.

55. **Sisopygis icterophrys** (*Vieill.*).—Not uncommon in open woods and bushy places through the entire year. A nest found December 24 was a rather shallow affair, built of twigs, weed-stalks, etc., and lined with wool and soft vegetable materials. It was placed on the horizontal branch of a bush overhanging the water, on the edge of a swamp, and contained three eggs nearly ready to hatch. Their color was white, with a few (in one case only five or six) large dots and splashes of brown.

56. **Cnipolegus cyanirostris** (*Vieill.*).—Apparently only a migrant, as but three specimens were taken, one September 29, 1879, and one each on September 26 and 29, 1880.

57. **Lichenops perspicillatus** (*Gm.*). VIUDITA NEGRA (LITTLE BLACK WIDOW).—Abundant at Concepcion in summer and many winter there. The plumage of the adult male is glossy black, the outer primaries alone being partly white. This would make a very pretty little “widow” did not the yellow appendages or outgrowths on the eye-lids give the bird such a grotesque appearance. They are bright yellow, as are also the irides and bill, so that even at long range it is impossible to mistake the bird for any other. They frequent the tall grass and reeds in wet places and are never found far from water. While they frequently go to the ground for insects, and even hop about there considerably, they only seem really at home when swaying on the long grass or perched on the top of some swamp shrub. In warm, quiet weather, even in winter, the male has a habit of flying perpendicularly upward from such a perch and returning again instantly. So quickly is the action performed that although he must rise to a height of ten or fifteen feet, not more than a single second is occupied in it. It looks precisely as if the bird were shot up by a spring and pulled back by an elastic, as in the case of a toy return-ball. A little quavering whistle is heard at the same time, and I suspect it is partly due to the action of the wings. The performance is doubtless an act of display for the benefit of the female, or a challenge to other males. It cer-

tainly is not for the purpose of catching insects, which are taken in the ordinary manner.

A nest found October 2, 1880, contained two fresh eggs, probably an incomplete set. They were white, with heavy brown spots scattered sparsely over the larger ends. The nest was neatly hidden in a wet tussock on the edge of a swamp. It was very deeply hollowed, formed of fine grass and a little hair and feathers, and the lip or border was covered with green moss.

The species was met with at all points visited, but south of Azul not a single male in the black plumage was seen, though the brown birds (presumably females or young) were met with almost every day for nine weeks, and frequently in large numbers. Of course I began to suspect that the males must moult into a brown suit after nesting, as do our Bobolinks and many other birds, but I shot specimens at various times, and all proved to be either females or young males, and as I was confident that at Concepcion black males were to be found through the year, I was at a loss for an explanation, and am so still.

58. **Machetornis rixosa** (*Vieill.*).—Occurs sparingly through the winter at Concepcion, and a few may remain to breed. Not elsewhere noted. On July 30, 1880, I found a small flock among trees on a slope close to the edge of a meadow. They were quite unsuspicious and I watched them some time before shooting any. In moving from place to place they kept together and first alighted on trees, afterward going down to the ground where they ran about as easily and gracefully as Thrushes. Their general appearance, even to points of color, so strongly suggested a true *Tyrannus* (e. g., *T. melancholicus*) that their easy motion on the ground was rather surprising until you noticed that their legs did not justify such a comparison. During the warmer weather the few which remained seemed to be solitary.

59. **Centrites niger** (*Bodd.*).—One cold, misty morning, the last of April, a few of these birds made their appearance at Concepcion. They gradually increased in numbers until July, when they were very abundant everywhere in open ground. The adult males were jet black with a patch of chestnut in the middle of the back. The females and young of the year were dull ashy inclining to tawny, and as the time wore on the feathers wore off and many of the dull colored birds were metamorphosed into good-looking males in spring plumage. I think this is

one of the most restless birds I ever saw. You cannot depend upon him to be in the same place two consecutive half seconds. He runs like a Sanderling, and whenever he keeps his feet still by accident, his wings are flitted in a way that shows his anxiety to be off. Several are usually found together, and sometimes a loose flock of a hundred or more is seen. They are very strong on the wing, sometimes mounting rapidly for several hundred feet, if suddenly startled, and after a few moments spent in circling like a Snipe, they drop again almost as suddenly as a shot, and as if from the very clouds. They became scarce at Concepcion during August, and by the 10th of September none were to be found there. At Azul, February 1, 1881, they were very plenty but in poor plumage, and we continued to see them in all suitable places until our return to Buenos Aires early in April.

Their note seemed to be only a sharp chirp. Of their breeding habits I know nothing.

*(To be continued.)*

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## BIRD NOTES FROM WESTERN ONTARIO.

BY T. McILWRAITH.

The winter of 1882-83 will be remembered in Western Ontario by those who are fond of observing the movements of our native birds as the one in which the Pine Grosbeaks were so plentiful. The visits of these northern strangers are by no means regular; sometimes a few pairs will be observed during January or February, and again they will be absent altogether for several years in succession, but on no previous occasion have they ever appeared in such numbers or stayed so late in the season as during the winter now drawing to a close. They were first observed in the shrubberies in and around the city about the 10th of January, and almost simultaneously with their arrival here there appeared notices in several country newspapers of the "arrival of flocks of strange birds, mostly of a smoky grey colour, but sometimes having a leader clad in glowing crimson."

While here they kept in small flocks, seldom exceeding eight in number, the proportion of adults in crimson dress being about one in twenty. Their forenoons were usually spent in feeding on the berries of the mountain ash, wherever they could be found; they were in the most frequented thoroughfares; and where the trees overhung the streets, the sidewalks were soon littered with the pulpy part of the berries, the birds using only the hard seeds. As the season advanced the supply of berries gave out, and they then resorted to the buds of the larch, and also fed freely on the fruit of such apples as they found still hanging on the trees in the orchards. In the afternoon they retired to the evergreens for rest and shelter. While here they showed the most gentle, sociable disposition, enjoying each other's company and keeping up communication by a series of soft call-notes. Occasionally, when all was still, a male would indulge in a low, soft warbling song of considerable duration, which I could fancy might be delightfully soothing in the stillness of a sick chamber, but too low to be appreciated by human ears under ordinary circumstances.

Toward the end of February the weather softened a little and the birds all left. This mild spell, however, was followed in a few days by a north-easter, accompanied with snow and sleet. Before it broke the birds returned again and sought their former shelter among the evergreens. This occurred on three successive occasions, but each time they returned in smaller numbers, and after the first departure none in the red plumage were seen. As late as the first of April a few were observed in the city, but they were evidently in transit and, calling loudly for company, seemed anxious to be off.

I think it quite probable that the peculiarities of the weather this season may have brought birds together which never saw each other before; at all events, it was a most unusual thing for us to see Pine Grosbeaks, Meadow Larks, Robins, Crossbills, Redpolls, Bluebirds, Song Sparrows, Tree Sparrows, all in one short excursion.

Being desirous of securing a few Grosbeaks where it could be done without breach of the city by-law, which forbids the use of fire-arms within the city limits, I made several excursions to the country during the severe weather for this purpose, and also to satisfy myself as to what birds were really wintering with us, and how they fared during the season of unusual severity.



Getting outside the city we at once lost sight of *Passer domesticus*, who has *not yet* betaken himself to the farm-houses, but almost immediately met with another recent addition to our birds which promises ere long to be as abundant in the country as the Sparrow is in the city. This is the *Eremophila alpestris*, Shore Lark. When I first made the acquaintance of this species twenty years ago, the few individuals observed came and went with the Snowbirds, and kept always with them while here. They were stout, well-developed birds, with the black and yellow markings clear and decided. Some ten or twelve years since a new race made its appearance, smaller in size, the colours paler, and having altogether a bleached, washed-out look about them when compared with the others. These have remained permanently, and, increasing from year to year, have now become our most common winter resident in the country. They breed very early by the road sides and in the low commons everywhere, and at this season of the year are seen either running in the road-tracks or sitting in rows of fifteen or twenty along the fences waiting till you pass that they may return to their regular feeding ground.

A ride of several miles through an open country developed nothing of ornithological interest. Sable, silent crows, flying in straight lines to some known point, were common; but the road now leads through several miles of bush containing a large proportion of evergreens, and here, if anywhere in the country, the Grosbeaks will be found. But they were not there; not a single specimen did we either hear or see. In a sheltered hollow, where tamaracks, pines, and cedars were growing thickly together, a noisy little group were enjoying themselves in a state of great hilarity notwithstanding the severe cold to which their fragile bodies were exposed. The Chickadee was apparently the leader of the company, but the Nuthatches were both there, and also the Tree-creeper, and one or two Golden-crested Kinglets, while a little Downy Woodpecker was drumming away on his own account, keeping his company in view all the time.

This ride took in a circuit of twenty-five miles, and we came back without a specimen save a poor emaciated Saw-whet Owl which we found lying peacefully on his back on the snow at the foot of a fence post, from which he probably dropped dead the night before in a fit of starvation.

On the 17th of March I made a similar excursion north of the city into the townships of East and West Flamboro', having for company, as before, the same male member of my family, aged fifteen. These townships are much broken up by cedar swamps and rough, uncleared land. Even at this advanced date the roads leading north and south were blocked with snow as high as the fences, and the farmers had taken down the rails and were traveling for miles through the fields parallel with the road to avoid the drifts. On a bare spot under a low-growing pine which stood in a cleared field, some dark colored little birds were observed hopping about among the fallen cones. A closer inspection showed them to be White-winged Crossbills; and so little did they seem to understand the effects of the gun that we got them all, seven in number, without leaving the tree. The males had partially assumed the red plumage, and the females were, as usual, green with white bars.

A few Pine Linnets were next obtained, and shortly afterwards, while passing through a swamp of mixed timber my companion had wing-tipped a Nuthatch, and was floundering through the deep snow in pursuit, when I saw him suddenly turn and fire in an opposite direction. In reply to the usual question, "What have you got?" the answer came back, "An Evening Grosbeak." Leaving the horse in the tracks I found that such was really the case, but, under fear of missing so rare a chance, he had fired too close and almost destroyed it. The call of another was still heard among the tree-tops, and in a few minutes I saw an Evening Grosbeak alive for the first time. I can't say my hand was quite steady, but I brought him down, with outstretched, quivering wings, with a single pellet through his head,—a bad place for a bird to be hit that is wanted for preservation, but in this case a little extra care was all that was needed to make a good mounted specimen. Both were young birds in the plumage of the female, and seemed as if hardly recovered from the first moult.

In the month of May, 1863, a few specimens were obtained near Woodstock, and again in May, 1871, I got three which were shot near London, but these are all I have ever heard of being found in Canada; and from the list of birds recently published by Messrs. Saunders and Morden of London, these dilligent collectors do not seem to have met with this species, which may be regarded as purely accidental here.

This ride took in a circuit of twenty miles, and convinced us that though the number of resident birds to be met with in winter is very small, yet there is always the chance of meeting unexpectedly something very rare and desirable. We were also quite satisfied that while here the Pine Grosbeaks do not remain in the bush, but keep by the towns and villages where they find the berry-bearing trees and bushes, especially the mountain ash, which yields their favorite fare.

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## NOTES ON SOME OF THE WINTER BIRDS OF MASSACHUSETTS.

BY HERBERT K. JOB.

It has been my privilege for several years past to enjoy many opportunities for observing the habits of the birds found in Eastern Massachusetts, and being less engaged during the winter season than at other times, I have been enabled to become rather better acquainted with the birds found then than with those seen at other times. Last winter (1882-83) was quite interesting as regards its feathered creatures, and it is my purpose in this article to refer to such of our visitors during that season as may be of interest to the readers of the Bulletin, and also to give some notes relative to past seasons.

All collectors in this section must have noticed how promptly most of our winter birds arrived last year; so, although my subject is winter birds, I shall have to begin back as early as October. The 11th of that month brought immense flocks of Pine Finches, some flocks containing as many as three hundred individuals. They remained mostly in localities where cone-bearing evergreens grew more or less plentifully, and were abundant until early in November, when they suddenly disappeared. A few scattering ones were seen in February, but scarcely any until a short time since, when quite a number appeared in my garden in Roxbury, feeding invariably in a small row of larch trees. Many of them were single birds, and none were

seen in parties of more than three or four. A number were shot, but others kept coming. This was May 8 to 11 inclusive, since which time no more have appeared.

Horned Larks came October 20, followed in three days by the Snow Buntings. Both of these usually retire northward early in March, but on May 27, 1882, I started a Horned Lark almost from under my feet on a rocky beach at Scituate. No nest was to be found, and whether it was breeding or not, I cannot say.

Crossbills of both species arrived November 4, and were found sparingly until late in February. It was my good fortune a short time ago (May 12) to meet a flock of five or six Crossbills in a grove of tall pines in Brookline, from which I secured two White-wings (*leucoptera*), adult male and female. Upon dissection it was evident that they were not breeding. What could have brought them here at this time?

Ipswich Sparrows can at last be ranked almost as common birds upon our seacoast in the late fall. Last year I saw them first on October 28, in Boston Harbor, and for about a month found more specimens than I could possibly desire to shoot. The main body leaves us late in November, but stragglers are occasionally found during the winter.

The first snow fell November 17. I was on an island in Boston Harbor the next day, where I met with an unlooked-for bird. As I was crossing the island I was surprised to see a shore-bird running over the snow, beneath which lay a mud-flat, a former resort for such birds. I had no difficulty in shooting the stranger, which proved to be a Killdeer Plover (*Ægialites vociferus*). The day was bitterly cold, and although these birds are known to linger here quite late at times, it is surprising that the delay in the present instance was not fatal. A week before this,—on the 11th,—I secured a Short-eared Owl on this island, which started up from a potato field as I approached.

The Pine Grosbeaks were later than the other birds in putting in an appearance. The first, as far as I know, came on November 23; still they were scarce for a couple of weeks, but from that time up to the middle of February they were one of our most common birds. They then grew scarcer, but were seen until March 10.

November 25 brought the Snowy Owls, which were not uncommon during most of the winter, especially the early part.

I did not see any Rough-legged Hawks myself, but a friend received one from a farmer's son, which the latter had shot as it sat perched on the chimney of his house one cold day in December, — perhaps to get warm. Another good capture was a Hermit Thrush, which I took on Christmas day in a pine grove, in company with a flock of Robins.

I have been interested for the last few years in noticing the irregular movements of our Nuthatches in winter. One season both kinds were present; another followed in which the White-bellied species (*carolinensis*) was common, but in which no Red-bellies (*canadensis*) were seen. I did not see one of either kind during the whole of the next winter, but in the last the Red-bellies were abundant, while the others hardly occurred at all. The cold evidently does not drive them from us, for it is during the severest winters that they seem to remain. What then does influence them?

Last winter was, as all know, a very cold one, and considering this I was much surprised to learn from a friend that on January 3 he met with a flock of some five or six Bluebirds near his home in Sharon. The winter before would have seemed more favorable for their occurrence.

I wish now to speak of that season (1881-82), which was rather exceptional as regards its birds. The weather being very mild and warm, few northern birds were found as far south as this State, while on the other hand some of the more southern species, such as seldom remain with us during the winter months, were more often noticed. Pine Grosbeaks, Crossbills, and Redpolls were altogether absent, but in their place flocks of Purple Finches roamed about the country; also Goldfinches, Robins, Jays, Golden-winged and Downy Woodpeckers and other such birds were much more frequently seen than is usual. The Sharp-shinned Hawks seemed to take advantage of this state of affairs, and remained here in force. On several occasions I saw them in the densely populated parts of Boston, and once I saw one fly boldly up to the window of a house, as if seeking something within.

I do not remember having known of a Great Blue Heron here in winter before, but last year, late in December, I observed one on an island in Boston harbor, where it was feeding in a marsh. Happening to revisit the island about the first of January, I met

the Heron again, feeding in the same spot. Another bird that I did not expect to see was the Red-headed Woodpecker. Numbers of them had been seen during the fall, but about the first of December most of them disappeared. Still some remained, and were seen in Brookline during the entire winter, not leaving us until the middle of April.

On February 4, while a severe snow storm was raging, I met another straggler. This was a Fox-colored Sparrow. I never took one before in winter, and think that their appearance in that season is exceptional. Another one, the second that I have known of, was taken February 17, by a friend.

Of course, even in a very mild winter, no great number of birds such as I have just been mentioning are found. No one notices them except the collector, and he only a stray one or two now and then. Some other instances of such wandering it might be well to speak of. In January, 1880, a friend of mine was skating on a pond where a number of men were engaged in cutting ice, when he noticed a curious looking bird sitting on the edge of the ice in a rather dazed manner, not heeding at all the presence of the workmen. He went for a gun, returned, and shot the bird, which I ascertained was a Black Guillemot. There had been a severe northeast storm the day before, and the poor creature had evidently got lost.

Another victim to a northeaster was a Woodcock, one day late in November last. This incident was also observed by a friend, who while passing along one of the streets of Boston, while a gale was blowing and the snow falling thickly, saw a Woodcock shoot down the street, borne on the wings of the wind. The unfortunate bird passed within a few feet of him, rendering identification certain. Nothing more was heard from it, so it is probable that it escaped in safety from the city.

It is not an uncommon thing to meet Kingfishers where open water can be found inland. One was noted last February in Brookline, and I have known of one or two more in about twice as many years. Titlarks were an agreeable surprise on February 25, 1882, when I came close upon two as they sat perched upon a rock on Moon Island, Boston Harbor. On February 8, 1879, I found a flock of Rusty Blackbirds in Brookline, where they were feeding in a swamp, there being some ten of them in the flock. Then on the 20th of December of the same year I saw a party

of White-throated Sparrows hopping about in a street, quite near a house.

This, I think, will suffice to show the freaks of some of our winter birds. Although our birds are pretty well known, yet, since they indulge in irregular movements in different seasons, much close observation is still needed to make us fully conversant with their modes of life.

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## LISTS OF BIRDS OBSERVED IN THE VICINITY OF COLORADO SPRINGS, COLORADO, DURING MARCH, APRIL, AND MAY, 1882.

BY J. A. ALLEN AND WILLIAM BREWSTER.

[The field notes of this List are based on the joint observations of Mr. Brewster and myself. The technical notes, in smaller type, are entirely by Mr. Brewster.—J. A. A.]

The area covered by the present list has a radius of about six miles, Colorado Springs being the central point. It therefore embraces the plains immediately adjoining the town, Austin's Bluffs to the northward, the Garden of the Gods, and that portion of Bear and Cheyenne Creeks between the base of the mountains and their junction with Fountain Creek. The places chiefly visited were the wooded bottoms of the two first-named creeks, and Austin's Bluffs. The broken ridges of the latter are scantily wooded with pines, and the intervening narrow ravines by oak scrub.

Excursions were made almost daily from April 7 to May 23, within which dates is included almost the whole period of the spring migration, few birds arriving either before the first date or after the second. The senior author also spent the month of March at Colorado Springs, and the summer at a ranch on West Monument Creek, about twelve miles northwest of Colorado Springs. A few notes are accordingly included respecting the occurrence of certain species of special interest from the fact that their breeding range does not extend below the base of the foothills. The

value of the list consists chiefly in its being a careful record of the arrival and relative abundance of the species coming within this limited area of observation.

The season, it may be added, was exceptionally cold and wet, with frequent falls of snow on the foothills, which on a few occasions extended to the plains, driving down, in several instances, birds which had previously retired to the foothills and lower slopes of the mountains. Probably, also, owing to the unusually inclement weather, many species arrived rather later than usual.

It remains to tender our grateful acknowledgements to Mr. Charles E. Aiken, Colorado's best known and highest ornithological authority, for varied acts of kindness, including many valuable suggestions as to the movements and resorts of birds. A few species of water birds, in each case duly accredited, are included simply on the basis of our seeing them as brought to him by collectors or sportsmen in the fresh state, the few localities near Colorado Springs favorable for water birds not coming within the range of our excursions.

1. ***Turdus migratorius propinquus*.** WESTERN ROBIN.—Common. Occasionally seen in small flocks in April and the early part of May. Observed nest-building May 1.

Most of the specimens taken are typical, but one, a fine adult male shot May 20, has the terminal spot on the inner web of the outer rectrices as large and purely white as in most eastern birds. The measurements of this specimen (which fall within the limits assigned to *propinquus* by Mr. Ridgway) are as follows: Wing, 5.40; tail, 4.70; bill from nostril, .52; tarsus, 1.33.

2. ***Turdus pallasi auduboni*.** AUDUBON'S THRUSH.—A few were seen about April 13, but no others till May 20, when for a few days they were quite abundant along the creek bottoms, having been driven down from the mountains by a heavy fall of snow.

Our seven specimens all come within the limits of size given for this form by Mr. Henshaw, in his excellent paper on the races of *Turdus pallasi*.<sup>\*</sup> The extremes are as follows: Wing, 3.72-4.05; tail, 3.08-3.20; bill (length from feathers), .54-.56.

Mr. Brown has lately expressed the opinion that "The difference in length of bill exhibited by the three races of this species is almost microscopic," and that "A much more tangible character, not mentioned by Mr. Henshaw, lies in the disproportionate slenderness of the bill of the west-

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\* This Bulletin, Vol. IV, pp. 134-139.



tern varieties."\* In so far as *pallasi* and *auduboni* are concerned I am inclined to agree with the first part of this proposition, but I should apply it also to the proposed new character, which seems to me an equally "microscopic one." Fortunately, however, there is no necessity for "splitting hairs," the differences in general size and coloration between *auduboni* and *pallasi* being readily appreciable.

3. **Turdus ustulatus swainsoni.** SWAINSON'S THRUSH.—First seen May 8, in large numbers. They continued abundant for several days, and were occasionally observed as late as May 23.

4. **Oroscoptes montanus.** SAGE THRASHER.—A few were seen April 10 to 15, but none later.

5. **Mimus polyglottus.** MOCKING BIRD.—One was taken at Austin's Bluffs April 26,—the only one seen. Mr. Aiken informs us that they occur occasionally about Colorado Springs, and that they breed abundantly a few miles to the southward, toward Pueblo, nesting in the cactus bushes.

6. **Mimus carolinensis.** CAT BIRD.—First seen May 10, and became more or less common in suitable localities a few days later.

7. **Harporhynchus rufus.** BROWN THRASHER.—First seen May 13, and immediately became more or less common in suitable localities.

8. **Harporhynchus bendirei.** BENDIRE'S THRASHER.—One was taken May 8 at Austin's Bluffs. (See this Bulletin, Vol. VIII, p. 57.)

9. **Sialia mexicana.** WESTERN BLUEBIRD.—First seen March 21. Later was more or less common in the creek bottoms till May 10. Large, mixed flocks of this species and *S. arctica* were seen on a few occasions, when heavy falls of snow had driven them down from the foothills. Were found breeding in June on West Monument Creek, down to the very edge of the plains.

10. **Sialia arctica.** ARCTIC BLUEBIRD.—First noticed about the middle of March, and for some weeks were rather common in all suitable localities—that is wherever there were trees. Were frequent in the town till into April, where they were as unsuspicious and confiding as the common Bluebird is in the East. Later they retired to the timbered creek bottoms, the bluffs, and foothills to pass the breeding season. One or two pairs were reported nesting in the town in boxes provided for their accommodation.

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\* This Bulletin, Vol. VII, p. 127 (foot note).

During stormy weather in April and the early part of May, particularly when snow covered the foothills or the edge of the plains, they gathered into flocks of fifty to one hundred and fifty or more, of which one-fourth to one-third were *S. mexicana*.

We may add that we heard no attempt at song from either *S. mexicana* or *S. arctica*, in this respect they differing strikingly from the Eastern Bluebird.

11. **Cinclus mexicanus.** DIPPER; WATER OUSEL.—The only one seen was shot April 7, at the mouth of South Cheyenne Cañon.

12. **Regulus calendula.** RUBY-CROWNED KINGLET.—Not uncommon during most of April wherever there was timber. Observed as late as May 5.

13. **Regulus satrapa.** GOLDEN-CRESTED KINGLET.—Several times met with in April, and one was shot May 4. Less common than the preceding.

14. **Parus atricapillus septentrionalis.** LONG-TAILED CHICKADEE.—Infrequently observed in the wooded creek bottoms and at Austin's Bluffs.

Our Colorado specimens of this race are but a trifle larger than *atricapillus* proper, but their tails are relatively longer, and the white of the wings and tail purer and more extended. The most typical examples of *septentrionalis* which I have are from Dakota, where the variety appears to attain its maximum size and whiteness. The difference between Dakota and Colorado specimens is considerable, in fact nearly as great as between the latter and true *atricapillus*.

15. **Parus montanus.** MOUNTAIN CHICKADEE.—A few pairs were seen during March and April; none later.

16. **Sitta carolinensis aculeata.** SLENDER-BILLED NUT-HATCH.—Two were shot in April—the only ones seen during our many excursions. A pair observed on West Monument Creek in June were evidently breeding.

17. **Certhia familiaris montana.** BROWN CREEPER.—Several were seen and one was shot April 7. A few were seen on following days, but none later than April.

The single specimen taken is typical of the above variety lately instituted by Mr. Ridgway.

18. **Salpinctes obsoletus.** ROCK WREN.—A single specimen was shot April 17, but no others were seen for ten days, when they suddenly became abundant, and for a week were to be seen in rocky places everywhere. They were less numerous later, but continued common at suitable localities.

Among our large series are a few specimens which, although in fresh, unworn spring plumage, almost wholly lack the usual dusky streaks of the throat and breast, the entire under parts,—with the exception of the jugulum, where there are a few faint shaft lines of a slightly darker shade than the general plumage—being immaculate. These birds are also unusually pale above, with the dorsal markings faint and few in number. As they were taken during the migration, they may represent a more or less local desert type, or the variation may be simply an individual one. I do not find it mentioned in previous descriptions. All of the Colorado specimens are very much grayer than some which I have from California.

19. **Catherpes mexicanus conspersus.** CAÑON WREN.—Heard April 10 in North Cheyenne Cañon; specimens were taken a little later in the Garden of the Gods.

20. **Troglodytes aedon.** COMMON WREN.—First seen May 5; a few days later they became common.

Colorado certainly *ought* to furnish true *parkmani*, but of the seven House Wrens which I collected there only two fulfil the requirements of that race. The others are neither grayer nor more distinctly banded than average eastern birds, from many of which they are practically indistinguishable. The comparative length of the first primary in the two forms is the only character which seems to possess any approach to stability, and this is not to be depended on. In short, the views which I have lately expressed\* regarding the instability of the race *parkmani* are strengthened by the study of this fresh material.

21. **Telmatodytes palustris paludicola.** LONG-BILLED MARSH WREN.—A single specimen was shot on the Fountain, near Beaver Ranch, April 22. This was the only one seen, but we were at no other time at a suitable locality for them.

22. **Anthus ludovicianus.** TIT LARK.—A few small flocks were seen during the last week of April.

23. **Helminthophila virginiae.** VIRGINIA'S WARBLER.—Single individuals were heard May 1 and 2, and a specimen was taken May 3. A few days later they became common, and throughout the month were more abundant than any other Warbler. They are partial to the oak scrub, where they breed, but were also more or less frequent in the cottonwoods of the creek bottoms. Are quite shy and difficult to capture for so small a bird, keeping closely concealed in the thick scrub, though very active.

A series of about fifty specimens illustrates certain variations of plumage which do not seem to have been previously noted. For instance: Both Dr. Coues and Mr. Ridgway describe the adult male as having the yellow

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\* See this Bulletin, Vol. VII, p. 82.

beneath confined to the tail-coverts and an isolated patch on the breast or jugulum. With the specimens before me, however, this is the exception rather than the rule. In the majority the yellow extends uninterruptedly from the breast to the chin, paling anteriorly until it fades into white near the base of the lower mandible. In a few examples it is nearly as bright on the throat as over the middle of the jugulum. In one very highly-colored bird a narrow ashy collar passes across the jugulum separating the yellow into two distinct patches, one of which occupies the throat, the other the upper portion of the breast and the lower part of the jugulum. This bird is peculiar also in having the orbital ring strongly tinged with yellow.

Mr. Ridgway says\* that the chestnut patch on the crown "is obsolete in the female"; Dr. Coues, that it is present but "more restricted than in the ♂."† The latter statement is the more nearly correct, for among the twelve females that I have examined not one has the crown entirely plain, although with a few the chestnut is pale and restricted to the central feathers. In the fully adult bird it is not less deep and extended than with average males, and the yellow of the breast and under tail-coverts is sometimes quite as rich as in some of the duller males. The latter, however, can be usually if not always distinguished by the darker ash of the head and the brighter yellow of the rump.

The crown-patch of the male varies little in color or extent, but it may be nearly or quite concealed, or conspicuously exposed, according to the condition of the plumage. The feathers of the crown, when fresh, are tipped with ashy, so that when each is in its proper place the chestnut beneath is perfectly covered. With the advance of the season, however, the ashy tips rapidly wear away, and with birds taken after the middle of May the crown-patch is a conspicuous feature. It may be always seen by disarranging the feathers.

24. **Helminthophila celata.** GOLDEN-CROWNED WARBLER.—First met with April 28. A few were seen almost daily till late in May.

Among a fairly extensive series of Orange-crowned Warblers I find two well-characterized and readily separable races, one a dark greenish-olive bird coming from Florida and Georgia, the other a bright yellowish form, the extreme of which is represented by specimens from California. The latter, it is perhaps needless to say, is variety *lutescens*, supposed to be restricted to the Pacific Slope.

Specimens from Texas and Minnesota are paler and less yellowish than California ones, but on the whole more nearly like them than they are like the Florida examples. Still closer to *lutescens* are my Arizona and Colorado representatives, several of which are so nearly identical with even the brighter California birds that it is practically impossible to distinguish them. The general evidence of this series shows a barely appreciable paling of the yellow in the Colorado and

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\* North Am. Birds, Vol. I, p. 199.

† Birds Col. Val., Vol. I, p. 221.

Arizona birds as compared with those from California, a still further and rather more decided diminution of this color in the Texas and Minnesota ones, and an abrupt and very wide gap between the latter and the dark greenish-olive Florida specimens.

If the geographical variation among the representatives of the region at large west of the Mississippi is always as trifling as in the series before me, little violence would be done by uniting *lutescens* and *celata* under the latter and prior name.

But whatever the disposition finally made with the western forms, there seems to be no reason why the dark bird found in the Southern Atlantic States should not be recognized as a distinct variety, for it differs more from *celata* than the latter does from *lutescens*. Mr. Ridgway called attention to some of its peculiarities in "North American Birds" (Vol. I, p. 202), proposing to distinguish it under the name *obscura*, but as he unfortunately claimed among its characteristics the absence of certain markings (*i.e.*, the "orange" crown-patch and white spots on the outer rectrices) which it has been since shown to normally possess, the variety fell into disrepute, having been latterly ignored even by Mr. Ridgway himself. Believing that it really deserves a distinctive name I take the present opportunity to reinstate it under the following diagnosis:—

*Helminthophila celata obscura* RIDGWAY. SUBSP. CHAR. Differing from true *H. celata* in being darker and dingier, especially beneath, where the usual yellowish tinge is replaced by a greenish one.

♂ adult (No. 1800, Coll. W. B., St. Mary's, Georgia, April 7, 1877). Above dark greenish-plumbeous; beneath dingy greenish-olive, darkest on the sides, palest on the middle of the abdomen; sides of head and neck scarcely lighter than the back; eyelids and a short, ill-defined superciliary stripe greenish-yellow; a concealed crown-patch of deep orange-rufous; inner webs of outer tail feathers narrowly margined with white near their terminal ends.

♀ adult (No. 1801, Coll. W. B., Mellonville, Florida, March 14, 1877). Lacking the rufous crown-patch; otherwise similar to the male.

*Habitat.* Georgia and Florida in winter and early spring, perhaps migrating northward to breed.

Audubon figured this race, and his plate even exaggerates its peculiar dark coloring. It is probable that his specimens were taken in Florida, although he does not state that such was the case. I have seen no examples from the Mississippi Valley east of the Mississippi River, but Mr. Ridgway says (North American Birds, Vol. I, p. 202) that "specimens from Southern Illinois . . . and from Wisconsin are precisely like Rocky Mountain examples." Two Massachusetts ones before me are doubtfully referable to var. *obscura*. Both are somewhat lighter than Florida specimens although darker and greener than Texas or Minnesota examples. As they are in fresh autumnal plumage, in this respect differing from any others that I have, I cannot decide upon their precise relationship.

There seems to be some mystery, by the way, as to where these south-

ern birds breed. They are not uncommon in Georgia and Florida during the winter and early spring, but they apparently depart before the end of April. To the northward of the Carolinas in the Atlantic States the Orange-crown, of whatever race, is very rarely seen, while the migrants that pass up the Mississippi Valley are said to belong to the typical (*celata*) form. Possibly *obscura* will be found to summer among the little-known mountains of Georgia and the Carolinas. In such a case it will probably turn out to be a very local form.

25. ***Dendroeca æstiva*.** YELLOW WARBLER.—First seen May 6; they soon became frequent in the town and in the willows and cottonwoods of the creek bottoms, and continued more or less common.

26. ***Dendroeca townsendi*?**—Three black-throated green Warblers were seen on Bear Creek, May 19, which could not be certainly distinguished from *D. virens*, but from the known range of the two species are more likely to have been *D. townsendi*. Having no gun at the time prevented their proper identification.

27. ***Dendroeca coronata*.** YELLOW-RUMPED WARBLER.—The first specimen was shot April 25. It afterwards became not uncommon, associating with *D. auduboni* and remaining for two or three weeks.

28. ***Dendroeca auduboni*.** AUDUBON'S WARBLER.—First seen April 28—a single male. Afterwards they were seen almost daily, and became fairly abundant about May 8, frequenting the shade trees and gardens of the town, as well as the creek bottoms and bluffs. Continued common till about May 16, and were last seen May 20.

29. ***Dendroeca striata*.** BLACK-POLL WARBLER.—A single one was seen May 8, and one was shot May 9, both at Austin's Bluffs, and the only ones seen. Mr. Aiken regards them as of regular occurrence but rare.

30. ***Geothlypis trichas*.** MARYLAND YELLOW-THROAT.—A single specimen was seen and taken April 13; no others were seen till May 10, after which they were more or less frequent in suitable localities.

In a recent paper on Arizona birds I called attention to certain peculiarities in western examples of this species, peculiarities already noted by previous writers, but by them regarded as too inconstant to warrant the separation of a new race. Since that time, however, I have examined a number of additional specimens, and among these the characteristics which distinguish western from eastern birds are so well maintained that I feel justified in instituting the following variety:—

*Geothlypis trichas occidentalis* var. nov. CH. SUBSP. Similis *G. trichas* sed cauda longiore; colore supra pallidiore et flaviore; colore infra magis flavicante et extento; alba striga in pileo latiore et puriore.

♂ adult (No. 5550, Coll. W. B., Truckee River, Nevada, May 4, 1881). Upper parts nearly uniform pale yellowish-olive, with a tinge of brown on the occiput; throat, jugulum, breast, anterior portion of abdomen, and under tail-coverts rich, pure yellow; sides of body warm ochraceous brown strongly tinged with yellow; middle of abdomen anteriorly creamy white; a black mask on the front and sides of the head bordered behind by a broad band of creamy white, slightly tinged with bluish; much concealed yellow on the feathers of the crown.

*Dimensions:* Wing, 2.32; tail, 2.30; culmen, .55.

*Habitat:* Pacific and Middle Provinces of the United States.

The differences which distinguish this race from *trichas* proper, although somewhat difficult of description, are readily appreciable upon a comparison of specimens; they may be briefly summed as follows: *Occidentalis* is somewhat larger than *trichas* and its tail is disproportionately longer. Its upper parts are always paler and usually yellower; the yellow of the under parts is decidedly richer and purer, and extends much further down on the abdomen, frequently tinging nearly all of the body beneath; the flanks are paler and more ochraceous; the white of the head purer and generally broader.

I have not seen var. *melanops* of Mexico but judging from descriptions the present race approaches it rather more closely than it does *trichas*. A decided approach is furnished by a specimen from Cienega Station, Arizona (No. 5906), which is even yellower above than my type of *occidentalis*, while the yellow of the under parts extends over nearly all the abdominal region and strongly tinges the flanks. This bird agrees very closely with Baird's description of *G. melanops* but is considerably smaller. In my paper on the Arizona collection I referred it to *G. trichas*, but I am now inclined to consider it an intermediate between the present race, *occidentalis*, and *melanops* of Mexico.

31. ***Geothlypis macgillivrayi*.** MACGILLIVRAY'S WARBLER.—First seen May 4. Soon became frequent, and continued more or less common in willows along creek bottoms till the end of the month.

32. ***Icteria virens*.** YELLOW-BREASTED CHAT.—First observed May 13; others seen and heard on following days.

33. ***Myiodioctes pusillus pileolatus*.** BLACK-CAPPED FLYCATCHING WARBLER.—First seen May 12; of frequent occurrence later in willow thickets along streams.

34. ***Setophaga ruticilla*.** REDSTART.—First seen May 18. Not common.

35. ***Pyranga ludoviciana*.** LOUISIANA TANAGER.—Arrived in large numbers May 12, and continued common.

36. **Hirundo erythrogastra horreorum**. BARN SWALLOW.—First observed May 2; frequently seen later. Not abundant.
37. **Tachycineta thalassina**. VIOLET-GREEN SWALLOW.—First seen May 4. A considerable number observed on the 14th, and at frequent intervals later. In July and August large numbers were seen near West Monument Creek, where they outnumbered all the other Swallows.
38. **Tachycineta bicolor**. WHITE-BELLIED SWALLOW.—Not seen in spring, but a pair was observed in June, nesting on the West Monument.
39. **Petrochelidon lunifrons**. CLIFF SWALLOW.—First observed about May 18, but doubtless arrived somewhat earlier. Small parties frequently seen on the wing later. On the West Monument late in summer it ranked next to the Violet-green Swallow in numbers.
40. **Stelgidopteryx serripennis**. ROUGH-WINGED SWALLOW.—First observed about May 10, and not uncommon later.
41. **Myiadestes townsendi**. TOWNSEND'S SOLITAIRE.—One shot April 14, and a few others seen on following days. They appeared in large numbers on April 29, evidently forced down from the mountains by a heavy snowstorm, and were everywhere abundant, even frequenting open fields near thickets. A few were seen the next day, but none afterward.
42. **Vireo gilvus**. WARBLING VIREO.—First taken May 16; frequently seen later, but was by no means common.
43. **Vireo solitarius plumbeus**. PLUMBEUS VIREO.—Two obtained May 3; seen at intervals later, but not common.
44. **Lanius borealis**. NORTHERN SHRIKE.—Seen a few times in March.
45. **Lanius ludovicianus excubitoroides**. WHITE-RUMPED SHRIKE.—Not common. First seen April 29, and single pairs were met with later. Nest with eggs taken May 23.
46. **Carpodacus cassinii**. CASSIN'S PURPLE FINCH.—A few were seen in the vicinity of Cheyenne Creek during April. Last observed about April 23.
47. **Loxia curvirostra mexicana**. RED CROSSBILL.—A flock of about thirty individuals was seen at Austin's Bluffs April 26. A few were noticed here and elsewhere at both earlier and later dates.

Although evidently not typical *mexicana*, our specimens approach that form, both in respect to general size (the longest wing among six exam-



ples measures 3.75 inches) and in the unusual length and thickness of the bill. The character upon which Mr. Ridgway lays special stress—viz., the equal size of the upper and lower mandibles in *mexicana*—is not maintained among them, however, the under mandible being, as in *americana*, decidedly weaker than the upper. The reference of such intermediate specimens is, necessarily, largely a matter of opinion, but on the whole, the present birds seem to be nearer *mexicana* than to the typical *americana* of the East.

48. **Chrysomitris pinus.** PINE FINCH.—One of the most abundant species, occurring everywhere in and near the wooded creek bottoms, and wandering thence to outlying thickets and hillside scrub, usually in small scattered parties, but sometimes massing into dense flocks numbering hundreds of individuals.

49. **Chrysomitris tristis.** GOLDFINCH.—Seen at intervals in small flocks during May, usually in or near town. Were common during summer.

50. **Chrysomitris psaltria.** ARKANSAS GOLDFINCH.—Noticed a few times and one shot on the West Monument in July. Not seen in May; probably arrive about June 1.

51. **Centrophanes ornatus.** CHESTNUT-COLLARED LONGSPUR.—A small flock of about twenty individuals was met with near town May 9, of which five were shot. No others observed.

52. **Rhynchophanes maccowni.** MACCOWN'S LONGSPUR.—A single specimen was shot May 9, from the above-mentioned flock of *Centrophanes ornatus*. No others were recognized.

53. **Passerculus savana alaudinus.** WESTERN SAVANNA SPARROW.—A few were seen, chiefly about the outskirts of the town, during the last half of April and the early part of May.

(To be continued.)

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## Recent Literature.

STEARNS AND COUES'S "NEW ENGLAND BIRD LIFE." Part II.\*—The appearance of the second volume of this book has been doubtless greeted

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\* New England Bird Life: being a Manual of New England Ornithology. Revised and edited from the manuscript of Winfrid A. Stearns, Member of the Nuttall Ornithological Club, etc. By Elliott Coues, Member of the Academy, etc. Part II. Non-oscine Passeres, Birds of Prey, Game and Water Birds. Boston: Lee & Shepard, Publishers. New York: Charles T. Dillingham. 1883. 8vo. pp. 409, 88 woodcuts.

with pleasure by many who have feared the fatality which seems to prevent most authors from reaching the Water Birds. But despite some interruptions feelingly alluded to in the introduction, Dr. Coues has gone bravely on with the task of "editing" Mr. Stearns's manuscript, and the finished work, now complete in two volumes, is the gratifying result.

Much that we said—whether of praise or censure—in our extended review of Part I will apply equally well to Part II; hence the present task is materially lightened.

Part II takes up the subject with the Non-oscine *Passeres*, and carries it through the remaining Land Birds and all the Water Birds, thus completing the treatise. It embraces 409 pages, of which 7 are devoted to an index of the second volume only, and 6 to an introduction of more general character. The main body of Part II comprises some 390 pages, or about 120 more than the corresponding portion of Part I. Despite this fact, the biographies, as a rule, are rather briefer than in Part I, the large number of species remaining to be treated rendering strict condensation necessary to bring the volume within its assigned limits. Still the habits, distribution, etc., of many of the birds—especially the more interesting ones—are usually sufficiently elaborated to accord with the general plan of the work, and the records relating to the rarer kinds are almost always exhaustively collated. The bringing together of these records—in connection with which the editor acknowledges his continued indebtedness to Mr. Purdie's researches—is one of the most prominent, as it certainly is one of the most valuable features of the book.

We are glad to notice an increased conservatism on the part of the editor in applying dubious or incomplete data to the determination of the comparative abundance and seasonal distribution of the less-known birds. In fact, throughout the first portion of the volume the evidence seems to have been weighed with sound judgment, and, in the main, with unimpeachable accuracy. But among the Water Birds there are rather frequent evidences of hasty, and often positively incorrect conclusions. At least we venture to assert that no intelligent sportsman or collector who has had an extensive experience on our shores or waters will agree to the following rulings:—

(1) That the Golden Plover regularly makes even a "flying visit" to New England in the *spring*.

(2) That the Willet is one of the "species . . . which regularly and plentifully summer in some portion of New England."

(3) That the Gadwall Duck occurs "during the migrations with some regularity," or that it "very probably breeds in the swamps of Maine."

(4) That the Blue-winged Teal is less numerous than the Green-winged Teal.

(5) That the Harlequin Duck is *only* "an extremely rare winter visitor" to New England.

(6) That the Ring-bill is a "common winter Gull."

(7) That either the Leach's and Wilson's Petrels, or the Greater and Sooty Shearwaters, are regularly found off our coast in *winter*.

Without going into details of evidence, for which there is no present space, we may say briefly there are good and sufficient reasons for characterizing the occurrence of the above-named species as follows:—

(1) The Golden Plover is an abundant late summer and early fall migrant, rarely if ever visiting New England in spring.

(2) The Willet is a regular but uncommon spring and fall migrant, breeding sparingly and locally in Southern and perhaps also in Northern New England.

(3) The Blue-winged Teal is an abundant fall migrant; a rather rare spring one. The Green-winged Teal is never abundant, but it is of regular occurrence during the spring and fall migrations.

(4) The Gadwall Duck does not occur regularly at any season; on the contrary it is very rare and probably only an accidental visitor. Much confusion has been caused by the assumption that the Gray Duck (*i. e.*, Gadwall) of the books is the same with the "Gray Duck" of New England gunners and sportsmen. The latter is always the Pintail.

(5) The Harlequin Duck is regularly common in winter on the coast of Maine, where, however, its distribution seems to be very local. A few are also taken nearly every season along the Massachusetts coast.

(6) The Ring-billed Gull is an uncommon bird at any season. It is not known to winter, the few specimens taken occurring in spring or fall.

(7) The Wilson's and Leach's Petrels, with the Greater and Sooty Shearwaters, are summer residents off the coast, leaving for the South before cold weather sets in, and returning rather late in spring.

The Hutchins's Goose, once more given for New England, has, we believe, only a doubtful claim to such distinction. Alleged specimens are not uncommon, but all that we have seen have turned out to be merely small Canada Geese.

The above are only some of the more important rulings wherein we conceive Dr. Coues to be in error. It must be confessed that many of these, as well as some nicer questions which we should similarly criticise, are sustained by the opinions of authors of high repute. It is notorious, however, that much of our published matter on Water Birds is either time-worn tradition, or vague inference;—better than nothing perhaps, yet far from representing the true condition of things with that accuracy which is so eminently desirable.

But while "New England Bird Life" falls short of absolute or even approximate perfection, it is, on the whole, a wisely-conceived and admirably-executed book—by far the best, in fact, which has been so far published on New England birds. As a manual rather than an exhaustive treatise on the subject, it forms a substantial corner stone upon which more extensive structures may be built. The field still offers abundant opportunities, but the crowning triumph is not to be won by an amateur of limited experience. Our literature has already suffered sufficiently in this respect, and the comprehensive "standard" work yet to be written had better be delayed many years than attempted by an incompetent

author. Meanwhile we can get along very well with Dr. Coues's excellent little treatise.

Before concluding, courtesy demands a second reference to the ostensible author of "New England Bird Life." Seeing what any one with eyes *may* see, we can only repeat our former comment, that Mr. Stearns is to be congratulated on his choice of an editor.—W. B.

EVERETT SMITH'S CATALOGUE OF MAINE BIRDS\*.—This catalogue is probably the most extended, if not the most important ornithological paper ever published by "Forest and Stream." Beginning in the issue of that journal for December 28, 1882, it has appeared by instalments, averaging about a page each, in all the consecutive numbers but two up to that for April 26, 1883, with which it was completed. Its scope and plan are thus briefly defined by the author in his introduction: "Although this catalogue is intended to be merely a popular list of the birds of Maine, I have endeavored to make it of scientific accuracy. Authorities or references are named for such notes as are not within the personal observation or corroboration of the writer."

The system of scientific nomenclature adopted is a curious one. Influenced by the unfortunate but incontestable fact that "no defined rules are adhered to by American ornithologists," and that "there is no exclusive authority for reference in regard to the scientific names of our birds," Mr. Smith hit upon the novel expedient of giving for each species the names that have been used by what he considers the "three foremost authorities" on North American birds; viz., Audubon, Ridgway, and Coues; their respective works referred to being the "Birds of North America," "Nomenclature of North American Birds," and the "Coues Check List and Ornithological Dictionary," 1882. This plan, so far as we are aware, is original. Its general adoption can scarcely be recommended but, in view of the present unsettled condition of our nomenclature, it is probably a useful feature in a paper of the intended popular character of the present catalogue.

In the list proper Mr. Smith has followed the plan usual in faunal papers. The character of the presence of each species is indicated; its local distribution over the state mapped out; and its average time of arrival, if a migratory visitor, noted. In addition, a short account of its habits is usually given. With the land birds, however, these annotations are seldom extended, and it is noticeable that the nesting, eggs, etc., of all but the commoner species are very briefly treated. Such brevity was not unwise if we may judge the author's general knowledge in this department by some of his present statements. Of the many instances that might be selected we have room for only the following: viz., that the eggs and habits of the Winter Wren "are

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\* The Birds of Maine. With annotations of their comparative abundance, dates of migration, breeding habits, etc. By Everett Smith. Forest and Stream, Vol. XIX, Nos. 22-26; Vol. XX, Nos. 1-7 and 10-13.

similar to those of the house wren;" that the Black-throated Blue Warbler "breeds usually in trees;" that the Chestnut-sided Warbler "breeds on trees;" that Wilson's Black-cap Warbler is "only a migrant through Maine;" that the American Goldfinch habitually lays spotted eggs; that the Great Crested Flycatcher "breeds usually on high trees"; etc. A similar and still more curious case of blundering is that of his general overstatement of the number of eggs laid by the smaller birds. For instance, the Vireos, which rarely if ever lay more than four eggs, are in all cases where the number is mentioned, accredited with clutches of "four or five."

But such points are trivial compared with certain really important statements which we have reasons for believing equally mistaken. Among these is a record of the breeding of the White-eyed Vireo in Maine, made on the strength of the author's observation of a pair which "once nested upon one of the upper branches of a maple tree" within a few feet of a chamber window in the heart of the city of Portland. Now every one who is at all familiar with this Vireo, knows that it is a frequenter of retired, swampy thickets and that its nest is rarely if ever placed at a greater height than five or six feet. It is of course dangerous to assume that any exceptional action on the part of a bird is *impossible*, but a case of nesting so unlikely as the above should not be accepted without the most positive proofs of identification. These our author does not furnish, and the way in which he describes the affair shows that he did not appreciate its importance.

Scarcely more satisfactory is the note on the supposed Boat-tailed Grackles seen at Second Lake in Washington County; and we are even inclined to doubt the identification of the Wood Thrush shot by Mr. Smith in 1865; while the Barn Owl collected in 1866, is apparently the notorious specimen which we have Mr. Brown's excellent authority\* for now discrediting.

Other cases might be instanced, but such scrutiny is hardly more profitable than gracious. A dubious record is easily made, with difficulty disproved. The most unsubstantial positive statement will stand the shock of much negative testimony. Hence we are often forced to judge an author by the insight that intuition and a few demonstrable cases give us into the general character of his *methods*. Granted that such judgment is *ex parte* and unjust, it is none the less unavoidable. When will ornithologists learn to rate accuracy at its full value?

Passing to water birds it is gratifying to find a better quality of work. Mr. Smith is evidently at home here, and proofs of the general accuracy of his information and judgment are numerous and unmistakable. In fact, with the exception of one or two unsatisfactory notes we fail to detect anything of importance which is open to serious question. Doubtless there are occasional trifling inaccuracies or misconceptions, but on the whole this portion of the list seems to form a really trustworthy presentation of the subject—one of the best, perhaps, that has so far appeared.

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\* See this Bulletin, Vol. VII, p. 58.

A brief yet adequate characterization of the catalogue as a whole, is difficult. It is too good a paper to be wholly condemned, too faulty a one to be generously praised. As an authority it should not be blindly followed;—there are too many obvious flaws to warrant implicit trust in the general structure. But as a contribution to our knowledge of the habits and distribution of Maine birds it forms an original and very acceptable paper. Its author—as known through the medium of his work—is apparently an ardent sportsman in whom an extensive field experience has awakened such a love for birds that he has become almost an ornithologist. Such an observer may write intelligently and usefully of the birds which have been the special objects of his study or pursuit, but he should not confidently presume to cover the more general field. The present paper would have been a more creditable one had these limitations been recognized and acted upon.—W. B.

NESTS AND EGGS OF THE BIRDS OF OHIO.—Part XVI of the great work reaches us in due course, dated April, 1883, with pp. 155-166, pll. xlv-lviii. Plate xlv, the nest of the Long-billed Marsh Wren and three eggs makes, as might be expected, a striking subject for illustration. Pl. xlvii, without nests, gives the eggs (three apiece) of the Black Tern (fig. 1), Kingfisher (fig. 2), Florida Gallinule (fig. 3), and Coot (fig. 4). Plate xlviii portrays in fig. 1 the nest and three eggs of the White-eyed Vireo, and in fig. 2 the nest of the Bay-winged Bunting, containing four eggs, with three others to one side on the paper. This nest seems to be wholly *upon* the ground, though we believe the rule is that the nest of this species is sunken flush with the level of the ground.—E. C.

CONTRIBUTIONS TO THE ANATOMY OF BIRDS.\*—Under this title a meritorious and very promising ornithotomist has brought together the greater part of what he has thus far accomplished in the way of avian anatomy. This "author's edition," which appears in advance of the Report of which it occupies over 200 pages, though fortunately without repagination, and with consecutive numeration of the 24 plates, consists of five separate and distinct osteological memoirs. These are: (1) of *Speotyto cunicularia hypogæa*; (2) of *Eremophila alpestris*; (3) of the *Tetraonidæ*; (4) of *Lanius ludovicianus excubitorides*; and (5) of the *Cathartidæ*. Only the last of these is new. Our readers will remember that we formerly † presented them with the plates of the *Speotyto* memoir; and notices‡ of the *Eremophila*, the *Tetraonidæ* and the *Lanius* memoirs have already been given in the present periodical. It would scarcely be

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\* Contributions to the Anatomy of Birds. By R. W. Shufeldt, M. D. [etc.] Author's edition, extracted (in advance) from the Twelfth Annual Report of the late U. S. Geological and Geographical Survey of the Territories (Hayden's). Washington, Government Printing Office, October 14, 1882. 8vo, title and pp. 593-806, pll. i-xxiv, many woodcc. in text.

† This Bulletin, Vol. V, pp. 129, 130, pll. i-iii.

‡ Ibid., Vol. VI, pp. 109, 110, and Vol. VII, pp. 44, 45.

fair, however, to judge their reappearance by their original character, all of them having been carefully revised and to some extent rewritten. The improvement is especially manifest in the *Tetraonidæ*, in which certain misstatements required correction, and the general tenor of the description of cranial characters needed to be freed from some objectionable features, particularly the literal interpretation of cranial bones as parts of modified vertebræ. This article is furthermore in its present dress embellished with numerous wood-cuts loaned by Baird from his "History of North American Birds," and the *Speotyto* paper is similarly illustrated. In the Grouse family, again, a good deal of matter relating to external characters, and even habits and geographical distribution, is profitably introduced. The lithographic plates are, we think, the same as before; 14 of the 24 are devoted to the four memoirs here in mention, the *Tetraonidæ* claiming 9 of them.

The appearance of anatomical work on birds in this country is so rare an event, and the outlook for that branch of the science, hitherto so sadly neglected among us, is still so far from being all that could be wished for, that these memoirs would be welcome even were their importance and utility less than they really are. The text is a faithful and on the whole an accurate description of the objects under designation, and the fidelity with which the plates are executed is most commendable. If "faithful are the wounds of a friend," the author will not otherwise regard some strictures which we must pass upon the work as a whole, although we are well aware — no one is more thoroughly aware than ourselves! — of the obstacles in the way of good scientific work which the Army delights to furnish. The circumstances of preparation of most of these articles made "breadth" of treatment out of the question, fostered a tendency to dwell with prolixity upon non-essential minutiae, and cramped the author in those comparisons and generalizations which alone put life in dry bones. For the rest, we must risk being thought finical or pedantic in finding fault with the literary infelicities which betray a less experienced pen than we have no doubt Dr. Shufeldt will duly come to wield. For instance, some one inclined to be cynical might call the following sentence, which concludes the *Tetraonidæ*, an example of "how not to do it."

"In short, although ornithologists will no doubt always retain these two forms [*Cupidonia* and *Pediæcetes*] in separate genera as the classification of birds goes, still it may be well to bear in mind that nearly or quite all of the anatomical characters of *Cupidonia* and *Pediæcetes* when compared together bring these two Grouse nearer to each other than any other two forms of the group in our fauna; so near, in fact, that but little violence would be perpetrated by restricting them both to one and the same genus, and no doubt there are not a few instances in our present classification of birds where forms not so nearly related as these two Grouse are that have been retained in one genus" (p. 700).

The osteology of the *Cathartidæ*, which occupies pp. 727-806, with plates xv-xxv, and is further embellished with original wood-cuts, as

well as others from the source above mentioned, is a superior piece of work, showing the author's progress under more favorable conditions of environment in Washington. The treatment is freer and clearer; description is not confined to the osteology, and comparisons are made outside the family—especially with the Vulturine *Falconidae* of the Old World. Attention is particularly called to the claw of "index" digit in this family. The numerous genera now in vogue, based upon external characters alone, seem to be well supported by osteological features, when, as in the present case, the whole skeleton is passed in review. On the whole it is a careful piece of descriptive work, the value of which is increased by adequate comparisons with related forms; and which would have been still enhanced had the author concisely formulated the net results of his investigation—giving his work that finish which, for example, confers such clarity upon Garrod's polished productions. — E. C.

**RIDGWAY ON NEW SPECIES AND SUBSPECIES OF BIRDS.**—In numerous papers published in the "Proceedings" of the National Museum for 1881 and 1882 Mr. Ridgway has described a considerable number of new species and races of birds and several new genera, chiefly from North and Middle America. They also contain notes on a few other hitherto little known species. The first paper of the series here enumerated\* contains descriptions of *Troglodytes* (?) *ochraceus* and *Acanthidops* (gen. nov.) *bairdi*, both from Volcan de Irazú, Costa Rica; in the second paper are described *Chasiempis sclateri* and *Cymochorea cryptoleucura*, both from the Sandwich Islands. In the third, *Asio portoricensis* is described from Porto Rico, with an analysis of the distinctive characters of this species and *A. accipitrinus* and *A. galapagoensis*, together with the synonymy of these forms. In the fourth paper two new subspecies of North American Thrushes are distinguished, namely, *Hylocichla fuscescens salicicola*, from Colorado and neighboring Territories, and *Hylocichla aliciae bicknelli*, from the Catskill Mountains of New York. In the fifth paper *Motacilla*

\*1. Notes on some Costa Rican Birds. By Robert Ridgway. Proc. U. S. Nat. Mus., 1881, pp. 333-337. March, 1882.

2. Description of a new Flycatcher and a supposed new Petrel from the Sandwich Islands. By Robert Ridgway. *Ibid.*, 1881, pp. 337, 338. March 29, 1882.

3. Description of a new Owl from Porto Rico. By Robert Ridgway. *Ibid.*, 1881, pp. 366-371. April 6, 1882.

4. Description of two new Thrushes from the United States. By Robert Ridgway. *Ibid.*, 1881, pp. 374-379. April 6, 1882.

5. On two Recent Additions to the North American Bird Fauna, by L. Belding. By Robert Ridgway. *Ibid.*, 1881, pp. 414, 415. April 24, 1882.

6. Description of several new Races of American Birds. By Robert Ridgway. *Ibid.*, 1882, pp. 9-15. June 5, 1882.

7. On the genera Harporhynchus, Cabanis, and Methriopterus, Reichenbach, with a description of a new genus of Miminæ. By Robert Ridgway. *Ibid.*, 1882, pp. 43-46. June 5, 1882.

8. Description of some new North American Birds. By Robert Ridgway. *Ibid.*, 1882, pp. 343-346. Sept. 5, 1882.



*ocularis* Swinh. and *Dendroeca vieilloti bryanti* are recorded from La Paz, Lower California, the former a straggler from Asia, the other previously known only from Southern Mexico and Central America. In the sixth paper are described six new races of American birds, as follows: *Methriopterus curvirostris occidentalis*, from the coast region of Western Mexico; *Mimus gilvus lawrencii*, from the Isthmus of Tehuantepec; *Merula flavirostris graysoni*, from the Tres Marias Islands; *Sialia sialis guatemalæ*, from the highlands of Guatemala; *Chamæa fasciata henshawii*, from the "interior districts of California, including west slope of Sierra Nevada; north to Sacramento, south to Walker's Basin, Tejon Mts., and San Diego"; and *Perisoreus canadensis nigricapillus*, from Labrador, considered as the Atlantic coast representative of the littoral race of Alaska, known as *P. canadensis fumifrons*. In the seventh paper Mr. Ridgway restricts the genus *Harporhynchus* to the *H. redivivus* group, and adopts *Methriopterus* Reich. for the *H. rufus* group. On *Harporhynchus graysoni* he founds his new genus *Mimodes*. In the eighth paper he distinguishes two new races and two new species of North American birds, as follows: *Catherpes mexicanus punctulatus*, from California (extending north to San Francisco and the Calaveras River); *Lophophanes inornatus griseus*, Middle Province of the United States; *Geothlypis beldingi*, from San Jose, Lower California; and *Rallus beldingi*, from Espiritu Santo Islands, Lower California. The latter is said to most resemble *R. elegans*.—J. A. A.

REICHENOW AND SHALOW'S COMPENDIUM OF NEWLY DESCRIBED GENERA AND SPECIES OF BIRDS.\*—This convenient summary, sufficiently explained by its title, is still continued. As already noticed (this Bulletin, Vol. VI, p. 111), it gives transcripts of the original diagnoses, when such are given, and in other cases mentions the types of the genera and the alleged characteristics of the species.—J. A. A.

REICHENOW'S CONSPECTUS PSITTACORUM.†—The order *Psittaci* is divided into 9 families and 45 genera (including 27 subgenera); 444 species and subspecies are recognized. The higher groups are characterized, and Latin diagnoses are given of the species, together with their principal synonyms, and references to figures and the more important works relating to the species. English and French, as well as German, vernacular names are given. The monograph thus forms a convenient handbook of this interesting order. It originally appeared in parts in the "Journal für Ornithologie" for 1881.—J. A. A.

\* Compendium der neu beschriebenen Gattungen und Arten. Von Anton Reichenow und Herman Shalow. Journ. für Ornith., XXIX Jahrg., 1881, pp. 70-102, 417-423; XXX Jahrg., 1882, pp. 111-120, 213-228.

† Conspectus Psittacorum, Systematische Uebersichte aller bekanten Papageienarten. Von Dr. Ant. Reichenow. 8vo, Berlin, 1882, pp. 234. (Sonderabdruck aus Journal für Ornithologie, XXIX Jahrg., 1881, pp. 1-49, 113-177, 225-289, 337-398.)

STEJNEGER ON TWO NEW RACES OF MYIADESTES OBSCURUS.\*—The new races are *M. obscurus* var. *occidentalis*, from the highlands of Southern Mexico and Guatemala, and *M. obscurus* var. *insularis*, from the Tres Marias Islands.—J. A. A.

STEJNEGER'S SYNOPSIS OF THE WEST INDIAN SPECIES OF MYIADESTES.† —Eight species are recognized, two of which (*M. sanctæluçiæ*, *M. dominicanus*) are described as new.—J. A. A.

NATIONAL MUSEUM DESIDERATA OF AMERICAN BIRDS.‡—Mr. Ridgway has published a list of Middle and South American birds not contained in the National Museum down to July, 1881, and also a list of special desiderata among North American birds§. These latter consist mainly of young, especially those in the first plumage. The species wholly unrepresented are very few, but quite a number are represented by only extra-limital specimens.—J. A. A.

DUBOIS ON GEOGRAPHICAL VARIATION IN THE CROSSBILLS.||—M. Dubois reviews the genus *Loxia* from the standpoint of geographical variation. In his introductory remarks he refers to his having previously called the attention of naturalists to the variability of certain birds, and to his having attempted to show that a large number of species are in reality simply climatic varieties. These varieties, races, or subspecies, he holds to be the result of the action of climate, food, or other "fortuitous causes" upon size and coloration, and states that his morphological studies have demonstrated that species are variable in proportion to the extent of their area of dispersion. Although claiming priority in the matter of reuniting *Loxia americana* to the European *L. crucirostra* (Conspectus syst. et geogr. Avium europ., 1871, p. 18), he hints at no general laws of geographical or climatic variation. In regard to the Crossbills, which he cites in illustration of his views, he refers the eight recognized forms of *Loxia* to three species, as follows: 1. *L. pityopsittacus*; 2. *L. crucirostra* (Linn., 1766), with varieties (a) *americana*, (b) *mexicana* (c) *himalayana*; 3. *L. leucoptera*, with varieties (a) *bifasciata*, (b) *amurensis*, the last here first distinguished.—J. A. A.

\*Description of two new Races of Myadestes obscurus Lafr. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1881, pp. 371-374. Apr. 6, 1882.

†Synopsis of the West Indian Myiadestes. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1882, pp. 15-27, pl. ii. June 5, 1882.

‡List of Species of Middle and South American Birds not contained in the United States National Museum. By Robert Ridgway. Proc. U. S. Nat. Mus., 1881, pp. 165-203. Aug. and Nov., 1881.

§List of Special Desiderata among North American Birds. By Robert Ridgway. Proc. U. S. Nat. Mus., 1881, pp. 207-223. Nov., 1881.

||De la Variabilité des Oiseaux du genre *Loxia*. Par M. Alph. Dubois, Conservateur au Musée royal d'histoire naturelle de Belgique. Extrait du Bulletin du Musée royal d'histoire naturelle de Belgique, Tome I. Oct. 1882.

BIRDS OF PENNSYLVANIA.—The “Quarterly Journal of the Boston Zoölogical Society,” IV, Jan., 1883, contains (pp. 8-11) the conclusion of a “List of Birds observed near Bradford, Pa.,” by James A. Tuelon. As the whole number is only 77, without exception very common and well-known species, and as the annotations are of no special consequence, the reason why the list is printed is not evident.—E. C.

MINOR ORNITHOLOGICAL PUBLICATIONS.—236. *Song Birds of Western New York*. By E. E. Fish. *Buffalo Courier* (newspaper), Feb. 12, 1882. —A pleasantly written, discriminating notice of about 30 species, occupying three columns of the newspaper. Read before the Buffalo Society of Natural History, Feb. 10, 1882.

237. *Die Einführung des Sperlings in den Vereinigten Staaten*. Von H. Nehrling. *Im familien Kreise* (Zeitung), Jahrg. 3, Nr. 14 und 15, pp. 271, 300. Milwaukee, Wisc., 3 und 17 Juli, 1880. —General review of the introduction, history, and habits of *Passer domesticus* in the United States.

238. *Die Vögel des South Park in Colorado*. Von Friedrich Trefz. *Monatsberichte des Deutschen Vereins zum Schutze der Vogelwelt*. VI Jahrg., Nr. 12, Dec. 1881, pp. 280-289, VII Jahrg., Nr. 2, Feb. 1882, pp. 39-44, Nr. 4, April, 1882, pp. 93-96, Nr. 7, Juli 1882, 183-190, Nr. 9, Sept. 1882, pp. 243-246 —A very fully annotated list of the species.

239. *Ornithologische Beobachtungen aus Texas*, III, IV, und V. Von H. Nehrling. *Monatsb. des Deut. Vereins zum Schutze der Vogelwelt*, VII Jahrg., Nr. 345, März, April u. May, 1882, pp. 72-78, 96-104, 127-134. —Running notes on various species. (For notice of parts I and II see this Bulletin, VII, pp. 109, 117.)

240. *Der Wald- oder Rothaugenvireo (Vireosylvia olivacea, Bonap., Red-eyed Vireo)*. Von H. Nehrling. *Monatsb. des Deutschen Vereins zum Schutze der Vogelwelt*, VII Jahrg., Nr. 9. pp. 233-243, Sept. 1882. —Very full biography of the species.

The department of “Zoölogical Miscellany” (Dr. F. W. Langdon, editor) in the “Journal of the Cincinnati Soc. of Nat. Hist.,” Vol. V, 1882, contains the following (Nos. 241-258):

241. *Dichromatism in the Screech Owl (Scops asio, Bp.)*. By the Editor. *Journ. Cincinnati Soc. Nat. Hist.*, pp. 52, 53.—Of 56 specimens 32 were red, and 24 gray.

242. *Albinism—Buteo borealis, Vieillot.—Red-tailed Buzzard*. By John W. Shorten. *Ibid.*, p. 53.—The “entire plumage white as snow.”

243. [*Bird Visitors at Schoolroom Windows*.] By E. R. Quick. *Ibid.*, p. 54.—Three species of Woodpecker; a Nuthatch, and Tufted Titmouse; locality, Brookville, Ind.

244. *Winter Birds of 1880 and 1881 in the Whitewater [Ind.]*. By E. R. Quick. *Ibid.*, pp. 54-56.—Brief notes on 41 species.

245. *Mimus polyglottus, Boie.—Mocking Bird*. By the Editor. *Ibid.*, p. 56.—Specimen taken at Bardstown, Nelson Co., Kentucky, Jan. 25, 1882.

246. *Aluco flammeus americanus*, Ridgway.—*Earn Owl*. By John W. Shorten. *Ibid.*, p. 57.—Specimen taken at Hartwell, O., about 10 miles from Cincinnati, March 3, 1882.

247. [*List of Birds observed on a March from Ft. Leavenworth, Mo., to Santa Fé, N. M., in 1846 and 1847.*] By James W. Abert, Colonel U. S. A. *Ibid.*, pp. 57-59.—Brief notes on about 60 species, giving date and place (approximately) of observation.

248. *A Day in a Louisiana Swamp*. By the Editor. *Ibid.*, pp. 89-92.—Includes informal notes on a number of species of birds.

249. *Spring Arrivals at Bardstown, Ky.* By C. W. Beckham. *Ibid.*, p. 93.—Brief mention of 12 species.

250. *Brookville [Indiana] Notes*. By E. R. Quick. *Ibid.*, pp. 93-95.—On 8 species.

251. *Herodias alba egretta* . . . *American Egret*. By John W. Shorten. *Ibid.*, p. 95.—Specimen in full breeding plumage taken at Maysville, Ky., April 22, 1882.

252. *Spiza americana* . . . *Black-throated Bunting*. By the Editor. *Ibid.*, p. 95.—Description of an abnormal specimen.

253. *Buteo borealis* . . . *Red-tailed Hawk*. By J. W. Shorten. *Ibid.*, p. 95.—Note on contents of stomach of an example examined.

254. *Cupidonia cupido* . . . *Prairie Hen*. By the Editor. *Ibid.*, p. 95.—On two specimens kept in confinement.

255. *Rallus elegans* . . . *Great Red-breasted Rail*. By the Editor. *Ibid.*, p. 95.—Specimen taken having a large water beetle sticking in its œsophagus.

256. *A Synopsis of the Cincinnati Fauna*. By the Editor. *Ibid.*, pp. 185-191.—“Class Aves: Birds,” p. 186 (264 species).

257. [*Notes on Ohio Birds.*] By Walter Douglas. *Ibid.*, p. 191.—Short notes on 9 species.

258. *Ornithological Notes from Brookville, Indiana*. By A. W. Butler. *Ibid.*, pp. 192, 193.—Short notes on 17 species.

259. *Nest of a Megapod*. By Prof. Henry A. Ward. *Ward's Nat. Sci. Bulletin*, Vol. I, No. 2, Jan. 1881, pp. 9, 10.—Detailed account, with cut of nest, of the breeding habits of *Megapodius tumulus*, from observations by the author.

260. *The Apteryx*. By F. A. L[ucas]. *Ibid.*, p. 11. General account of the *Apteryges* and their relationships.

261. *Hints about making Bird Skins*. By F. A. L[ucas]. *Ibid.*, p. 11.

262. *How to Soften Dry Bird Skins*. By W. T. H[ornaday]. *Ibid.*, p. 11.

263. *The Black Swan*. By “Cygnus,” with an introductory paragraph by Prof. H. A. Ward. *Ibid.*, No. 3, April, 1882, p. 8.—On the habits of *Chenopsis atrata*.

264. *Osteological Abnormalities*. By Frederic A. Lucas. *Ibid.*, p. 12.—Devoted mainly to mammals, but notes a malformed skull each of the common Fowl and Robin, and lower mandible in a South American Bittern (*Tigrisoma*).

265. *The Moa at Home*. By E. E. H[owell]. *Ibid.*, II, No. 1, Jan. 1883, pp. 4, 5, 7, 8.—On the first discovery of bones of the Moa, when and how Moas became extinct, their classification, etc., with cuts of four Moa skeletons recently sent to the Cambridge Museum of Comparative Zoölogy, and of skin from neck and of a feather of a Moa.

266. *Taxidermy at Home*. By "One of the Taxidermists." *Ibid.*, pp. 13, 14.—Taxidermy and taxidermists at Ward's Natural Science Establishment, Rochester, N. Y., with cut of the taxidermists' workroom, and some sensible observations on the general subject of taxidermy.

266 bis. *The Century Article*. Editorial. *Ibid.*, p. 2. — Corrections of article on "The Taxidermal Art" in "Century" magazine for Dec. 1882. (See next title.)

267. *The Taxidermal Art*. By Franklin H. North. *Century Magazine*, XXV, Dec. 1882, pp. 230-239, 10 figg.—Contains references to the work of such noted taxidermists as Waterton, the Verreaux brothers, etc., the work carried on at Prof. Ward's establishment at Rochester, N. Y., with some account of the difficulties of the art and how they are overcome. Of the 10 illustrations 8 relate to birds, and represent pieces by F. S. Webster, W. T. Hornaday, J. W. Fraine, and W. E. D. Scott. (Mistakes in giving credit for some of the pieces figured are corrected in the following No. of the Magazine, XXV, p. 462.)

268. *With the Birds on Boston Common*. By Bradford Torrey. *Atlantic Monthly*, LI, Feb. 1883, pp. 203-208. — Contains notes on *Sphyrapicus varius* and *Lanius borealis*, and briefer notices of many other species.

The "Ornithologist and Oölogist,"\* volume VI (March 1881-March 1882), contains, besides brief notes about common species, too numerous and not of sufficient importance for enumeration within our limited space, the following (Nos. 269-363):—

269. *The Oölogist. Its History from the Commencement*. By the Associate Editor [S. L. Willard]. *Ornithologist and Oölogist*, VI, pp. 1-3.

270. "*That Woodcock*" [*with the stick through its breast*]. By H. Merrill. *Ibid.*, VI, p. 3, cut.

271. *Sparrow Hawk*. By Jno. H. Sage. *Ibid.*, VI, p. 6.—Breeding at Portland, Conn., in a pigeon-hole in a barn! Also notice of capture of *Accipiter fuscus* in winter (Feb. 4, 1881).

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\* Ornithologist and Oölogist. Joseph M. Wade, Editor and Publisher. Norwich, Conn. Large 8vo. Vol. VI, March 1881-March 1882, pp. 1-96. For notice of earlier volumes of the "Oölogist" see this Bulletin, Vol. IV, 1881, p. 47, 48. The volume here summarized contains many papers of much interest respecting the breeding habits of species not previously well-known. Each number, however, usually contains a paragraph of "corrections" of misstatements in previous issues, in addition to corrections occasionally made by contributors, which seems to show a lack of care on the part of the editor in the discrimination of matter. Misprints and other typographical infelicities are by no means rare, yet we can but congratulate the editor on the steady improvement in these respects which mark the volume, and the increasing scientific value of its matter, contrasting as it does most favorably with that of the earlier volumes of the series.

272. *Night Herons in Winter*. By Henry Hales. *Ibid.*, VI, p. 6.—Habits of a tame individual kept by the writer at Ridgewood, N. J.

273. *California Bird Notes*. By B. W. Evermann. *Ibid.*, VI, p. 7.—On the habits of *Geococcyx californianus*, and notes on the early nesting of various other species.

274. *Hooded Warblers. Nesting in Southern Conn.* By J. N. Clark. *Ibid.*, VI, pp. 9, 10.—The taking of various nests recorded.

275. *Horned Lark. Nesting Habits in Orleans Co., N. Y.* By F. H. Lattin. *Ibid.*, VI, pp. 10, 11.

276. *Cactus Wren (Campylorhynchus brunneicapillus)*. By G. Holterhoff, Jr. *Ibid.*, VI, p. 11.—Account of its breeding habits, nest and eggs.

277. *Scarlet Tanager*. [By Dr. H. A. Atkins.] *Ibid.*, VI, p. 13.—Dates of arrival of *Pyranga rubra* at Locke, Ingham Co., Mich., for 25 years.

278. *Baltimore Oriole*. By Dr. H. A. Atkins. *Ibid.*, VI, p. 13.—Dates of its arrival for 25 years at Locke, Ingham Co., Mich.

279. *Bird Notes*. By J. M. Howey. *Ibid.*, VI, p. 13.—Capture of a Hawk Owl (*Surnia ulula hudsonia*) at Gorham, N. Y., Nov. 1875, and on the breeding of the Killdeer Plover (*Ægialites vociferus*) and Indigo Bird (*Cyanospiza cyanea*) at Canandaigua, N. Y.

280. *Catching a Tartar*. By F. T. Jencks. *Ibid.*, VI, p. 14.—A Little Black-head Duck (*Fulix affinis*) caught by the tongue by a mussel.

281. *Marsh Hawk (Circus hudsonius). A Large set of Eggs*. By S. F. Rathbun. *Ibid.*, VI, p. 14.—A clutch of 7 found at Dunnville, Ont.

282. *Henslow's Sparrow. Nesting in Northern Conn.* By C. M. Jones. *Ibid.*, VI, pp. 17, 18.—*Coturniculus henslowi* met with several different years, and two nests found, at Eastford, Conn.

283. *Collecting on the Pacific Coast*. By C. A. Allen. *Ibid.*, VI, pp. 18, 19.—Notes on various species of Cormorants, Puffins, Gulls, etc., found breeding at Punta de los Reyes, Cal.

284. *Least Titmouse. Its Nesting Habits in California*. By B. W. Evermann. *Ibid.*, VI, p. 19.

285. *Northwestern Screech Owl*. By Chas. Bendire. *Ibid.*, VI, pp. 21, 45.—On the nesting habits and eggs of "*Scops asio kennicotti*."

286. *Bird Notes from Virginia*. By W. T. Allen. *Ibid.*, pp. 20, 21.—On the nesting of several species, and the capture of a Cooper's Hawk with a "large splinter . . . through the fleshy part of the wing near the shoulder."

287. "*Catching a Tartar*." By Frank S. Wright. *Ibid.*, p. 22.—A Florida Gallinule caught by the lower mandible by a mussel.

288. *Öölogical Notes from St. John [N. B.]*. By M. Chamberlain. *Ibid.*, VI, pp. 23, 24.—On the nesting of the White-winged Crossbill, Solitary Sandpiper, Winter Wren, etc.

289. *Yellow-bellied Woodpecker (Sphyrapicus varius)*. By S. F. Rathbun [= Rathbun]. *Ibid.*, VI, pp. 25, 26.—On its breeding in small numbers near Auburn, N. Y.

290. *Bubo Virginianus*. *Its Nesting Habits, etc.* By C. A. Hawes. *Ibid.*, VI, pp. 26, 27.

291. *Verdin or Yellow-headed Titmouse* (*Paroides flaviceps* (Baird)). By G. Holtherhoff, Jr. *Ibid.*, VI, p. 27.—Its breeding habits.

292. *Ruby Throated Hummingbird*. — (*Trochilus colubris* Linnæus.) By A. H. Mundt. *Ibid.*, VI, p. 29.—Its habits in confinement.

293. *Great Auk*. By J. T. T. Reed. *Ibid.*, VI, p. 29.—Notice of the sale at auction in London of two "rather damaged" eggs of this species for respectively £100 and £102.

294. *Small Green-crested Flycatcher*. By Dr. H. A. Atkins. *Ibid.*, VI, p. 29.—Dates of the arrival of *Empidonax acadicus* for 25 years at Locke, Ingham Co., Mich.

295. [*Winter*] *Notes from Norwich, Conn.* By S. T. Holbrook. *Ibid.*, VI, pp. 30-32.

296. *California Pigmy Owl* (*Glaucidium gnoma*). *Life Size*. By Wm. Wood, M.D. *Ibid.*, VI, pp. 33-35, 47-48.—A general history of the species, with cut of the bird (p. 33).

297. *The Screech Owl in Confinement*. By Edgar A. Small. *Ibid.*, VI, p. 35.

298. *A Tame Wild Blue Jay* (*Cyanura cristata*). Editorial. *Ibid.*, VI, p. 36.—Nesting of the species in dooryards, and of one sitting bird so tame as to permit herself to be repeatedly removed from her nest by the hand.

299. *The Season of '81*. By J. M. W[hipple]. *Ibid.*, VI, pp. 37, 38.—About the nesting of Hawks and Owls near Norwich, Conn.

300. *Growth of Robins*. By Dr. S. W. Hart. *Ibid.*, VI, pp. 38, 56.

301. *General Notes*. *Ibid.*, VI, p. 39, 43.—On several species by various contributors.

302. *Notes from Saratoga, N. Y.* By Guy C. Rich. *Ibid.*, VI, p. 39.—On the arrival and date of nesting of various species, with an *erroneous* record of the capture of "a Cormorant (*G. Carbo*)" at Saratoga Lake. (On this record see below, No. 363.)

303. *Notes from Shelter Island [N. Y.]* By W. W. Worthington. *Ibid.*, VI, pp. 40, 46.—Dates of arrival and nesting of various species, etc.

304. *Large Clutches of Eggs*. Editorial. *Ibid.*, VI, p. 40.—Burrowing Owls with sets of 11 eggs each; Barn Owl with 10, etc. See also *Ibid.*, p. 53.

305. *Burrowing Owl*. *Speotyto cunicularia hypogæa*. (Ridgw.). By Cap. Chas. Bendire, U. S. A. *Ibid.*, VI, pp. 41-43, 61.—General history of the species.

306. *William MacGillivray*. Editorial. *Ibid.*, VI, p. 43.—List of his principal writings.

307. *Rare Finds*. Editorial. *Ibid.*, VI, p. 44.—Chiefly an extract from a letter from Dr. James C. Merrill, about rare nests described by him later in this Bulletin (Vol. VI, pp. 203-207). Also see "Corrections," p. 53.

308. *Whip-poor-will*. By Dr. H. A. Atkins. *Ibid.*, VI, p. 45.—Dates of arrival of *Antrostomus vociferus* at Locke, Mich., for 26 years.

309. *Notes from Denver, Colorado.* By D. D. Stone. *Ibid.*, VI, pp. 45, 46, 67.—Reference to nesting of several species, including "*Zamelodia ludoviciana*," for which read *Z. melanocephala* (p. 45).
310. *Kentucky Warbler* [*Oporornis formosa*]. *Its Nesting Habits.* By F. T. Jencks. *Ibid.*, VI, p. 49.
311. *Black Throated Blue Warbler* [*Dendræca cærulescens*] *Nesting in Connecticut.* By C. M. Jones. *Ibid.*, VI, pp. 49, 50.
312. *Yellow-bellied Woodpecker Nesting at Auburn, N. Y.* By T. J. Wilson, M. D. *Ibid.*, VI, p. 50.
313. *Notes from Moosehead Lake, Me.* By J. H. Sage. *Ibid.*, V, pp. 50, 51.—Notes on the nesting of a number of the rarer species.
314. *Notes from Bangor, Me.* By Newell A. Eddy. *Ibid.*, VI, p. 51.—Notice of a number of "good 'finds.'"
315. *Pine Groesbeaks* [sic]. By H. Gray. *Ibid.*, VI, p. 51.—Several flocks of "*Pinicola enucleator*" seen in summer at Albion, N. Y. *N. B.*—At p. 61 this note is stated to relate to the "Pine Goldfinch, *Chrysomitris pinus*."
316. *Little Blue Heron.* By John N. Clark. *Ibid.*, VI, p. 51.—Half a dozen in immature plumage taken at Saybrook, Conn., Aug. 12, 1881.
317. *Remarkable Flight of Birds.* By M. Chamberlain. *Ibid.*, VI, p. 53.—Scarlet Tanagers, Indigo Birds, and Green Herons, at Westport, Nova Scotia, "driven in by a gale."
318. *Close of the Season.* By J. M. W[hipple]. *Ibid.*, VI, pp. 54, 55.—Desultory notes on various Connecticut birds.
319. *Those "Brants."*—*Corrections.* By W. H. Collins. *Ibid.*, VI, p. 55.—The supposed Brant's eggs previously described in *Oölogist* as found at St. Clair Flats, Mich., proved to be eggs of the Ruddy Duck.
320. *Notes from Maine.* By M. H. *Ibid.*, VI, p. 56.—On decrease of certain birds formerly common about Camden, Me., etc.
321. *Blue-winged Yellow Warbler* [*Helminthophila pinus*]. *Its Nesting Habits, etc.* By Fred. T. Jencks. *Ibid.*, VI, p. 57.
322. *Golden-crowned Kinglet* [*Regulus satrapa*]. *Its Nest and Eggs.* By Harry Merrill. *Ibid.*, VI, p. 58.—On the identification of a nest and eggs described by the late Dr. Brewer in this Bulletin for April, 1879 (Vol. IV, p. 96).
323. *Snow Bird* [*Junco hiemalis*] *nesting in New York State.* By J. A. Dakin. *Ibid.*, VI, p. 59.
324. *Blue Yellow-backed Warbler* [*Parula americana*] *Nesting on Shelter Island [N. Y.]* By W. W. Worthington. *Ibid.*, VI, p. 62.
325. *Black-capped Yellow Warbler* [*Myiodiocetes pusillus*]. *Its Nesting Habits.* By W. Otto Emerson. *Ibid.*, VI, pp. 62, 63.
326. *Pintail Duck* [*Dafila acuta*]. *Its Nest and Eggs.* By D. H. Eaton. *Ibid.*, VI, p. 63.
327. *Kingbird and Kingfisher.* By Fred T. Jencks. *Ibid.*, VI, p. 64.—The latter attacked by the former.
328. *Kentucky Warbler.* By Edgar A. Small. *Ibid.*, VI, p. 64.—Short note on its nest and eggs.



329. *Sparrow-Hawk and Plover*. By Charles A. Willis. *Ibid.*, VI, p. 64.—Diving of the latter to escape attack.
320. *Rare Birds*. Editorial. *Ibid.*, VI, p. 64.—A Yellow Rail taken at Topsfield, Mass., and a Curlew Sandpiper at Pine Point, Me.
331. *Prothonotary Warbler*. *Protonotaria citrea*. By Fred T. Jencks. *Ibid.*, VI, p. 66.
332. *Notes from Maryland*. By Edgar A. Small. *Ibid.*, VI, p. 66.—On 7 species; includes Snowy Owl, Raven, Pileated Woodpecker, etc.
333. *Small-billed Water Thrush*. By M. K. Barnum. *Ibid.*, VI, p. 66.—Nesting in Onondaga Co., N. Y.
334. *Yellow-headed Blackbird*. By Geo. L. Tappan. *Ibid.*, VI, p. 67.—Description of a "peculiar specimen."
335. *Rose-breasted Grosbeak*. Editorial. *Ibid.*, VI, pp. 68, 69, 84.—Account of a caged specimen.
336. *Osprey Eagle—Inland*. Editorial. *Ibid.*, VI, p. 69.
337. *Notes from Maine*. By Harry Merrill. *Ibid.*, VI, p. 71.—Commentary on article of same title by "M. H." (See above, No. 320.)
338. *Hooded Warbler*. [By Fred. T. Jencks.] *Ibid.*, VI, p. 72.
339. *Red-headed Woodpeckers in Southern Conn.* By J. M. Clark. *Ibid.*, VI, p. 72.
340. *Cooper's Hawk*. By J. M. W[hipple]. *Ibid.*, pp. 73, 74.
341. *California Quail breeding in the Garden*. By C. M. Crowell. *Ibid.*, VI, pp. 74, 75.
342. *American Bittern*. By Guy C. Rich. *Ibid.*, VI, p. 77.—As observed at Saratoga, N. Y.
343. *Worm-eating Warbler* [*Helminthotherus vermivorus*]. By Fred. T. Jencks. *Ibid.*, VI, p. 78.
344. *Native Birds in Confinement*. By Annie Trumbull Slosson. *Ibid.*, VI, p. 78. — *Juco hiemalis*, *Plectrophaeus nivalis*, *Ægiothus linaria*.
345. *Red-headed Woodpeckers [in Connecticut]*. By Wm. Wood. *Ibid.*, VI, pp. 78, 79.
346. *Notes from Maryland*. By Edgar A. Small. *Ibid.*, VI, p. 79.—Nesting of White-bellied Nuthatch reported, with notes on the breeding of other species.
347. *Red-headed Woodpeckers [at Hartford, Conn.]*. By Harry T. Gates. *Ibid.*, VI, p. 80.
348. *American Long-eared Owl* [*Asio americanus*]. By Capt. Chas. E. [sic] Bendire. *Ibid.*, VI, pp. 81, 82.—On its nesting habits in Idaho and Oregon Territories.
349. *Yellow or Red-shafted Flicker, which?* Editorial. *Ibid.*, VI, p. 82.—One side of the bird presented the characters of the Yellow-shafted Flicker, and the other side those of the Red-shafted.
350. *Notes from Shelter Island [N. Y.]* By Moses B. Griffing. *Ibid.*, VI, p. 82.—Ten White-bellied Swallows seen Oct. 25 and one Nov. 23, 1881, etc.
351. *Fork-tailed Flycatcher*. By H. Nehrling. *Ibid.*, VI, p. 83, with

cut.—Erroneously mentioned as "*Milvulus Tyrannis*," and the cut is of that species. See below, Nos. 359, 360, for correction.

352. *Road-runner* [*Geococcyx californianus*]. By B. W. Everman. *Ibid.*, VI, p. 85.—On its breeding habits.

353. *Chaparral Cock* [*Geococcyx californianus*]. By George B. Sennett. *Ibid.*, VI, p. 86.—Chiefly respecting the color of its eggs.

354. *House Sparrow in Maine*. By H. Merrill. *Ibid.*, VI., p. 86.

355. *Mexican Goshawk* [*Asturina nitida plagiata*]. By Capt. Chas. E. [sic] Bendire, U. S. A. *Ibid.*, VI, pp. 87, 88.—General account of the species, with details of its nesting habits.

356. *Our Two Cuckoos breeding in One Nest*. By Dr. H. A. Atkins. *Ibid.*, VI., p. 88.

357. *Sharp Shinned Hawk* [*Accipiter fuscus*]. By J. M. W[hipple]. *Ibid.*, VI, pp. 89-91.—On its nesting habits.

358. *Notes from Saratoga, [N. Y.]*. By Guy C. Rich. *Ibid.*, VI, p. 91.—Brief interesting notes on the breeding of various species.

359. "*Fork-tailed Flycatcher*." Editorial. *Ibid.*, VI, p. 92.—Explaining how in Dr. Nehrling's article on this species (see above, No. 351) it came to be spoken of as *Milvulus tyrannus* instead of *M. forficatus*, the name used in the author's manuscript.

360. "*Fork-tailed Flycatcher*," *Correction*. *Ibid.*, VI, pp. 93, 94.—This heading covers letters from H. Nehrling, Geo. B. Sennett, R. Ridgway, and William Brewster, in reference to H. Nehrling's paper bearing this title in the preceding number of the *O. and O.* (See above, No. 351.)

361. *Golden Eagles*. By S. A. Munson. *Ibid.*, VI, p. 94.—On its capture at Meadville, Pa., Dec. 10, 1881 (see this Bulletin, VII, p. 58) and also near Hartford, Conn.

362. *Whitney Owl* [*Micrathene whitneyi*]. By Capt. Chas. E. [sic] Bendire, U. S. A. *Ibid.*, VI, pp. 94-96.—Recounting the author's observations on the habits of the species, etc.

363. *Another Gannet (Sula bassana) from the interior of New York State*. By C. Hart Merriam, M. D. *Ibid.*, VI, p. 96.—The "*Cormorant (Graculus carbo)*" mentioned at p. 39, Vol. VI, of the *O. and O.* (see above, No. 302) as shot at Saratoga Lake announced to be really *Sula bassana*!

364. *Nest of Chatura pelagica*. By Thomas Mehan. *Proc. Acad. Nat. Sci. Philadelphia*, 1882, pp. 215, 216.—J. A. A.

## General Notes.

CAPTURE OF THE BLUE-GRAY GNATCATCHER (*Polioptila cærulea*) IN CONNECTICUT.—A male of this species was killed here May 11, 1883, by a boy with a sling shot, and is now in the cabinet of Mr. Jos. W. Lord. The only previous record for Connecticut that I find is the one given by Linsley (1843), and since quoted by Allen, Merriam, and other writers.—JNO. H. SAGE, *Portland, Conn.*

PARKMAN'S WREN IN ILLINOIS.—On May 7, 1883, while out collecting specimens I discovered a Parkman's Wren (*Troglodytes ædon parkmani*) on the side of a narrow wood surrounded by a marsh. On looking over the "Catalogue of Birds of Illinois," by Robert Ridgway, I noticed my friend Mr. Cole was the first to discover the Parkman's Wren in this State. I immediately called his attention to mine, and on comparing them we found them identical. In the catalogue referred to, under the title of Parkman's Wren, it says: "Several specimens in the collection of H. K. Coale from Hyde Park." This is a mistake, as he has only one specimen, mine therefore being the second. Author's collection, No. 331. Locality, Wood Lawn, Ill.—JOSEPH L. HANCOCK, *Chicago, Ill.*

BREEDING OF THE SHORT-BILLED MARSH WREN (*Cistothorus stellaris*) IN THE HUDSON HIGHLANDS.—In June, 1882, I found a nest in some "cat-tails" and rank grass in the marsh at the mouth of Moodna Creek, at Cornwall on the Hudson. The nest contained three white eggs, one of which is in my collection. This bird, of somewhat local distribution, has not hitherto been reported from the Highlands of the Hudson River.—ETTINGE ROE, *Cornwall-on-the-Hudson, N. Y.*

EARLY CAPTURE OF THE ORANGE-CROWNED WARBLER.—As perhaps worthy of mention in the Bulletin I may state that I shot a male *Helminthophila celata* on March 22, 1883, at Haddonfield, N. J., as it was feeding busily in the maples. Although the bird is rare, the date of capture is even more noteworthy than the simple fact of its occurrence.—SAMUEL N. RHOADES, *Haddonfield, N. J.*

OCCURRENCE OF SIURUS NÆVIUS IN GREENLAND.—A specimen of the Small-billed Water Thrush was killed at Nanortalik, Greenland, in May, 1882, and was taken to Copenhagen by Erasmus Müller, one of the Government of Denmark employées in Greenland. It is now in the Royal Zoölogical Museum of that city. This I believe to be the first known occurrence of this species in Greenland.—J. J. DALGLEISH, *Edinburgh, Scotland.*

CAPTURE OF THE YELLOW-BREASTED CHAT AT ALBANY, N. Y.—In the latter part of May, 1882, I observed two birds of the appearance of the Yellow-breasted Chat (*Icteria virens*) in a sunny thicket between two small pieces of woods. But as they were silent and very shy, I was not positive of their identity. On the 19th of May of the present year, while collecting in the same thicket, I heard the unmistakable notes of a Chat. Its cries were very frequently uttered, but so shy was the bird, that, although searching for him nearly every day afterwards, it was not until the 26th of the same month that I secured him.

On the 19th of May I also secured three Northern Phalaropes (*Lobipes hyperboreus*. Cuv.) at a small lake near Albany.—G. A. LINTNER, Albany, N. Y.

NESTING OF CHRYSOMITRIS PINUS AT SING SING, N. Y.—The first of last of October, Pine Finches were first seen by us, in this locality, individuals and small flocks flying over uttering their characteristic and not unpleasant note. By the middle of the month they became common, frequenting the stubble and potato fields, feeding on the seeds of the ragweed (*Ambrosia artemisiæfolia*). Immense flocks, containing hundreds, were often seen. After the middle of December most of these flocks disappeared, a few individuals mixing in with the Redpolls and Goldfinches. About April 20 they began to reappear, and on May 8 I heard a song new to me; following in the direction, I found it to be that of the Pine Finch. The following week the birds were often seen, and their song frequently heard.

May 16 I saw one busily feeding on the buds of the Norway spruce. Now and then he would stop feeding, hop to the end of a twig, shake out his feathers, raise his crest, and then burst forth in song. While watching him and thinking of the probability of a nest near, he flew a short distance and alighted on the top of a red cedar (*Juniperus virginiana*), where he was immediately joined by his mate, her bill containing a quantity of soft, down-like material. After a moment's hesitancy, she settled down into a half completed nest. After depositing the materials for the nest, the female would fly away for more, the male would follow her as far as the Norway spruce above mentioned, where he would await her return; and as soon as she reappeared he would accompany her to the nest, and alight on the top of the tree, but in no way assisting in gathering material or in the construction of the nest. On May 25 I secured the nest. It was situated about two feet from the top of the tree, and about twenty-four from the ground. It contained four nearly fresh eggs. The nest proper, or outside part, is a frail affair, the lining making up the bulk of the nest. The outer part is made of fine twigs from the Norway spruce, loosely placed together, a few rootlets and pieces of string being interwoven. The lining is very compact, made up of hemp-like material, horse hairs, bits of thread, feathers, rootlets, and like substances. The nest measures eight centimeters in breadth by five centimeters in depth; the cavity five centimeters by three centimeters in depth. The ground

work of the eggs is of a light blue green, the spots, which are numerous and somewhat confluent on the larger end, are of a light brown lilac color. A few large and solitary spots of dark brown are dispersed sparingly over the greater part of the egg, diminishing in size towards the smaller end. One egg was unfortunately broken; the others measure as follows:  $12\frac{1}{2} \times 16$  millimeters,  $12\frac{1}{2} \times 16\frac{1}{2}$  mm.,  $12 \times 17$  mm.—A. K. FISHER, M.D., *Sing Sing, N. Y.*

**SUSCEPTIBILITY OF A BIRD TO COLOR.**—A curious case of this affection is reported to me by Mr. George F. Crook, of Cambridge, Mass. "I have a caged Red Linnet (*Carpodacus purpureus*), now about two years old—a cheerful fellow, unless anything *blue* should be presented to him or placed near him. Should either my wife or daughter—with whom he is on the best of terms—come near him with a blue dress, ribbon, or handkerchief, he becomes terribly excited and utters painful cries. No other color affects him in this way. About a year ago he escaped from his cage and was away nine days; his cage hung outside, and he returned to it in a very dilapidated condition. Had he been frightened by some Blue Jay? If not, what can be the cause of his 'blue-craze'?"

While we cannot explain the facts, we have no doubt the cause is farther to seek than any such accident. The effect of colors upon animals—as red upon a bull or turkey-cock—is a perfectly well-known fact, though one not satisfactorily accounted for.

This recalls a very curious case once brought to my professional notice, of a little child with some obscure nervous affection of the eyes, which rendered him painfully sensitive to light. This child delighted in anything blue, and the mental impressibility was so great that it was *transferred from color to sound*. There is a very strange connection, as musicians well know, between the two kinds of impressions derived from light-vibrations and sound-waves. The mother of the child could always soothe and please it by singing or playing "blue music," as it is called; while a few notes of "red music" sufficed to make the child cry out as if in great distress, and if continued, almost threw it into convulsions.

As if the bird's case were not already sufficiently curious and obscure, Mr. Crook later informed me that when his *blue-crazed* Red Linnet moulted, as it did last fall, not a single *red* feather showed itself; the former red feathers all came out *yellow*, as is so frequently the case with these red birds when moulting in confinement. If *Carpodacus* could only tell us, now, all he knows about the three primary colors, and express it in the music of his song!—ELLIOTT COUES, *Washington, D. C.*

**THE LARK FINCH AGAIN IN MASSACHUSETTS.**—On the 6th of April last, while "hunting without a gun," I saw for a moment a bird which I was confident was *Chondestes grammacus*. I visited the locality repeatedly after that, but without result until the evening of April 29, when I heard

the hardly-to-be-mistaken song of this bird. Next morning I was on the ground early, heard the song again, and finally obtained a sight of the singer so closely as to render the identification complete; but unfortunately failed to secure him. During the following week I looked for him every morning and evening, but he was no more to be heard or seen.

The record of this bird for Massachusetts (for all New England as well), as given in the latest work (Coues's Stearns of 1881), embraces three examples, no one of which was taken in the spring, unless possibly the first, in 1845, when the month is not given.

I send this note with hesitation, mindful of the ancient comparison of values of "a bird in hand," etc. (a low estimate from an Ornithological point of view!), but as I saw distinctly the white outer tail-feathers so characteristic of *Chondestes*, and heard the remarkable Canary-like notes several times, I consider the identification positive.—F. C. BROWNE, *Framingham, Mass.*

THE MEADOW LARK (*Sturnella magna*) IN VERMONT IN WINTER.—This species generally leaves for the south by the middle of October and I have never, till now, noted them later than this. On December 9, 1882, I shot a male in this vicinity, the ground at the time being covered with three inches of snow. On dissection the crop was found to be filled with an unrecognizable mass of insects, probably beetles.—F. H. KNOWLTON, *Middlebury, Vt.*

GEOCOCCYX AS A VOCALIST.—Whilst out on a ramble a few weeks since in the foot-hills near San Diego, I chanced to make the (to me) interesting discovery of the possession of considerable vocal powers by the Road-runners. I had stopped for a few moments' rest and shelter from a noon-day sun, beneath the scant shade of an elder tree, and as I lay enjoying my "siesta" I heard from a hill-side in front of me what I at first thought to be the cooing of a Dove. I probably would have paid no particular attention had it not been that a friend with me, inquiring what it was that made the cry, I undertook to show him the supposed Dove. Again, and a third time, the cry was repeated before I could discover the originator, and when I did I could not at first credit my eyes when my ears had been so at fault. Not a tree or bush of decent size could be seen as a shelter for my Dove, and I marvelled that it should "coo" so contentedly from such a lonely site, and this it was that stimulated search—ocular search—for the author of the now mysterious cry.

The hill-side being only scantily covered by a scattering growth of cactus and low bushes, permitted a thorough looking over, and yet it was some minutes before I saw its only occupant and the vocalist whose somewhat ventriloquial notes had puzzled me, a male *Geococcyx californianus*.

Standing near the summit of the hillock, amidst his favorite cactus, and with outstretched neck and head bent down, he would utter, as if by prodigious effort, the lugubrious notes I had wrongly thought the cooing of the Dove. At each iteration of the cry he seemed to make a renewed

effort as if to rid himself of the troublesome "whooo," and when finished would stand motionless, perhaps marvelling at the sweetness of his own voice, or more likely awaiting a response. Thinking that this extraordinary exhibition might be for the benefit of his mate, I started up, after listening to several more "encores," and proceeded to investigate the hill-side. I found no bird but the one there, and my approach sent him scurrying across the valley.

These peculiar notes of the Road-runner sound, as near as I can word it, much like the prolonged syllable *whooo*—aspirating strongly the *wh* and giving the vowel as a soft guttural. This note,—not so prolonged as the "coo" of the Dove,—is repeated some five or six times in distinctly separate utterances, and is given with an effort which I can only liken to that exerted by our dung-hill champion when he calls to early matins. Now that I know these facts, I can remember numerous occasions when I heard the same sound, and wondered at not being able to see a Dove, which I naturally assumed to be the author of it. While I feel confident that even a careful ear might not detect the difference in the two sounds—not knowing the facts—yet once known there is little danger of mistaking them if heard near by. The softer Dove's "coo" is also not generally repeated as many times.

It may be that this observation brings nothing new to those well posted, but as it is new to me, and as I learn from residents here that it is a new fact to them, I will make it known, trusting that it may be news to many others. This I would not do whilst so much in the dark as to previous history, but that I am unable to "search the records" in this remote locality, and can only go by my own recollections.

One thing more, lest I mislead, and that is to say that besides this peculiar succession of notes, the Road-runner has a harsh, disagreeable "squawk," which, while not uttered often, is by no means a rare accomplishment or one not apt to be noticed by those who are familiar with the bird in its haunts.—G. HOLTERHOFF, JR., *National City, Cal.*

A PARTIAL ALBINO SHORT-EARED OWL (*Asio accipitrinus*).—I have a female of this species taken here April 29, 1883, in which the entire plumage is suffused with white, the ruff, upper part of neck, the median and lesser coverts, ends of primaries, secondaries, and tail being strongly so.—JNO. H. SAGE, *Portland, Conn.*

GREAT GRAY OWL IN RHODE ISLAND.—A very fine specimen of this species (*Syrnium cinereum*) was killed at Wickford, R. I., March 25, 1883. Mr. Gray, in our employ, heard of it and succeeded in purchasing it. We had a Horned Owl to mount the same day, and also a Barred Owl. The body of the Great Gray Owl was less than half the size of the Horned Owl's, and but little larger than that of the Barred Owl, though the bird itself exceeds the Great Horned in size. The eye is very small, and the breast feathers extremely long. Taken all in all, it is the most bird for the least substance we ever examined.—FRED. T. JENCKS, *Providence, R. I.*

OCCURRENCE OF A THIRD MASSACHUSETTS SPECIMEN OF THE LABRADOR GYRFALCON (*Falco gyrfalco obsoletus*).—A Gyr Falcon which I refer to variety *obsoletus* has just come into my possession through the kind offices of Mr. Charles I. Goodale, the well-known Boston taxidermist. It was shot in Stowe, Mass., in 1881, and mounted by S. Jillson of Hudson. It is a male in a plumage agreeing closely with that described by Mr. Ridgway\* as the fully adult condition of the male of *obsoletus*. This specimen appears to be only the third which is known to have occurred in Massachusetts.—WILLIAM BREWSTER, *Cambridge, Mass.*

INSTANCE OF SEMIDOMESTICATION OF CALIFORNIA QUAIL.—While visiting the Tule River Agency in Tulare County, California, the agent, Mr. C. G. Belknap, learning of my interest in birds, related to me the history of a brood of California Quail (*Lophortyx californica*), which inhabited the near vicinity of the agency buildings. Besides being interesting, the facts narrated appear to me to contain a suggestion that may prove of value to all who are concerned in the domestication of Quail or other game birds. Briefly told the story is as follows.

One of the agent's hens, whose propensity for sitting had been repeatedly checked with a stern hand, suddenly disappeared. After a considerable interval the enterprising madam returned leading in her train—not a brood of chickens but a bevy of downy Quail, consisting of no fewer than fifteen chicks!

It is not difficult to surmise how she obtained possession of her treasures. The California Quail is extremely abundant in this locality, and while wandering about under the pangs of disappointed hopes the forlorn fowl doubtless alighted on a Quail's nest, ensconced in some secluded and inviting nook, with the owners absent. The temptation proved too strong to be resisted. Returning home the mother Quail, backed by her liege lord, doubtless made a stout fight for her own, but found herself utterly unable to cope with her formidable rival and drive her from her newly acquired possessory rights; no doubt *Lophortyx* soon gave up the unequal contest and retired to provide for a new brood in pastures new.

Very likely the misguided fowl supplemented the domestic treasures acquired in this original manner with an egg or two of her own, laid by the side of the stolen property as a sort of concession to outraged maternal instincts. These were forsaken, of course, on the appearance of her adopted nestlings.

Curiously enough the instincts of the wild birds, though but callow, proved stronger than the inherited tendencies of the domestic fowl, and as the brood increased in size and strength their foster-mother grew more and more wild. When the wings of the fledgelings became strong enough to bear them and they were flushed from the ground, the hen made frantic efforts to follow them on the wing. Evidently she became not a little unbalanced under the strain of caring for her strangely acting progeny. Up to the time the nestlings were fairly able to shift for themselves the

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\* This Bulletin, Vol. V, pp. 92-95.



mother hen showed a disposition to shun the house and the associations of the barn-yard, and in their company to lead a wild and roving life. In due course of time the maternal solicitude weakened, and finally she reassumed her wonted place in the hennery. Strangely enough the Quail now in turn showed the effect of the temporary association, and, unwilling to entirely dispense with the motherly care, followed her to the hennery into which they frequently penetrated and fed. They never roosted there but retired at night to the branches of the nearest trees.

As the fall approached the brood was scattered—perhaps some were killed by Hawks—but at the time of my visit, the following spring, a portion of the number still frequented the neighborhood, and could be distinguished from other Quail by their tameness.

I believe that nearly all the experiments that have been tried in domesticating game birds have been made with old birds which have been allowed to rear their own young. Yet the above facts would seem to indicate that by allowing a domestic fowl to hatch the eggs and assume sole charge of the young, considerable impression may be made on their wildness, even when, as in the case narrated, the birds were left entirely free to follow the dictates of their own wills and instincts. Had the brood in question been deprived of the powers of flight at an early age, and their ability to range about been thus circumscribed in part or wholly, a very much greater effect on their wild spirits would have followed. Whether by the adoption of these or any other measures the California *Lophortyx* or any other of our Quails and Grouse can be fully domesticated is a matter which perhaps admits of much doubt, but which can only be satisfactorily demonstrated by actual experiments more carefully and systematically made than those hitherto attempted.—H. W. HENSHAW, *Washington, D. C.*

THE WOOD IBIS IN MASSACHUSETTS.—Mr. E. C. Greenwood, of Ipswich, writes me that a Wood Ibis (*Tantalus loculator*) was taken "June 19, 1880, at Georgetown, Mass., by the late Frank Hale, which was given to me." This is the first record of the species not only for Massachusetts, but for New England. It has, however, been taken at Troy, N. Y., and Williamsport, Penn. (see this Bulletin, Vol. I, p. 96), as well as at equally northern localities further west.—J. A. ALLEN, *Cambridge, Mass.*

THE SCARLET IBIS IN FLORIDA. — During a recent visit to Charleston, South Carolina, I found a Scarlet Ibis in the Museum of the College of Charleston, which is apparently a veritable United States example. The label bears the simple inscription "Scarlet Ibis, Ibis rubra, Florida," in the handwriting (so I was told by Dr. Manigault, the present curator) of Dr. Holmes, the late curator of the collection. Behind this memorandum it is impossible to go, there being no catalogue or other record of the collection of birds. The specimen itself (an adult, mounted) is evidently very old, being faded, dust-stained, and badly moth-eaten. As it must have been placed in the collection well back in the period of Dr.

Bachman's activity, it is strange that so important an acquisition was not announced either by him or his intimate friend Audubon. Still there would seem to be no present reason for doubting that the bird really came from Florida, to which it is now positively accredited for the first time. The only previous records for the United States at large are Audubon's well-known one of a flock seen in Louisiana and Dr. Coues's mention (Key, p. 264) of some fragments of a specimen from the Rio Grande.—WILLIAM BREWSTER, *Cambridge, Mass.*

RAILS AND SNIPE IN OHIO IN WINTER.—Page 124 of the April number of the Bulletin contains a note by Dr. Elliott Coues on the wintering of the Sora Rail at the North. The following from my field notes may be of interest in this connection: "Nov. 23, 1880.—Shot two Virginia Rails. Saw one Wilson's Snipe. Weather has been very cold, mercury below zero for three nights, everything frozen, ice on canal 4 inches thick." These birds were not in holes, were not hibernating, nor were they sick. I flushed them from a tussock of dried grass in a marsh along the Ohio canal. They could and did fly well. It is impossible to tell how long they would have remained in this locality had I not killed them, but I trust they would have staid later than December 12.—HOWARD JONES, *Circleville, Ohio.*

BREEDING OF THE MALLARD IN NEW ENGLAND.—With reference to the statement in Stearns's "New England Bird-Life," that the authorities do not appear to be aware of the breeding of the Mallard in New England, I receive a note from Mr. Elisha Slade of Somerset, Mass., to the effect that the bird is a regular breeder in his neighborhood.—ELLIOTT COUES, *Washington, D. C.*

THE GLAUCOUS GULL (*Larus glaucus*) AT PORTLAND, MAINE.—An instance of this Gull's occurrence in the vicinity of Portland is at last furnished by the capture of a specimen at Peake's Island, April 27, 1883. I examined the bird in the shop of Mr. John Fleming of Portland, to whom it was sent for preservation.—NATHAN CLIFFORD BROWN, *Portland, Me.*

THE COMMON CORMORANT ON THE COAST OF SOUTH CAROLINA.—In the collection of the College of Charleston (South Carolina) I have lately examined two specimens of *Graculus carbo* which are labelled as having been captured near that city. The southward wanderings of the species on the Atlantic coast do not seem to have been previously traced beyond the Middle States.—WILLIAM BREWSTER, *Cambridge, Mass.*

OCCURRENCE OF THE NORTHERN PHALAROPE AND AUDUBON'S WARBLER, AND NESTING OF THE MOCKING BIRD, IN WESTERN KANSAS.—Fort Wallace, where the following observations were made, is situated on the Kansas Pacific Railway, within twenty-five miles of the west line of

the State, at an altitude of 3,319 feet. May 25, 1883, near the Fort I saw on a pond made by damming the south fork of the Smoky-hill River a pair of little birds swimming near the centre with a small flock of American Eared Grebes. From their motions and position on the water I knew they were Phalaropes, but saw they were too small for Wilson's, which is a common migrant through Eastern Kansas; also I had never noticed the latter birds resting upon the water, or swimming, except short distances on their feeding grounds, or when winged by a shot; but I could not make out with certainty whether they were the Northern or the Red Phalarope. So I laid down in a hollow at the edge of the bank and watched them for a long time, hoping the wind, which was strong and favorable, would drift them within shot, but they kept in the centre of the pond, and when they did rise circled spirally to a height of about one hundred feet, then struck north. *Gone*, and my disappointment was great! As I lay there estimating the distance, and blaming myself for not venturing a shot, my hopes were revived by the sight of a flock of fifteen or sixteen winging their way down the pond and alighting with the Grebes at the place where the others were seen. Instead of quietly resting, like the mated pair, they began chasing each other with tremulous wings and bobbing of heads. The males (the plainest bird, an exception to the rule) were doing their best to appear brave and attractive. Their actions during courtship are peculiar and ludicrous, much like those of Wilson's Phalarope, which I have watched on their love or mating grounds. The birds only remained a short time, arising in a body from the water and circling like the first. I quickly slipped into my gun a couple of shells loaded with No. 6 shot, and dropped five of the birds, which the wind soon brought to the shore; on picking them up they proved to be the Northern Phalarope (*Lobipes hyperboreus*), two males and three females. These birds are found along the coast of the Pacific, as well as on the Atlantic coast, but I think their occurrence so far inland worthy of note. I measured the birds but only mounted one, as I have a pair in my collection, shot in the Bay of Fundy on the tide streaks, known as "rippplings," where the birds gather to feed upon the minute snails and other forms of life on the drift. The shrimps, feeding upon the same, herrings feeding upon the shrimps, pollock, like hungry hogs, often leaping out of the water in their eager haste to catch the herrings, and the gulls screaming and swooping down for their share, make up a wild and exciting scene in the never-ending struggle for life, the strong preying upon the weak.

Two days later, in the same vicinity, I saw, on the ground and in the willows and stunted cottonwoods skirting the stream, several Audubon's Warblers (*Dendroica auduboni*). To remove any doubts of their identity I shot one of the birds. I found them in 1882 an abundant winter sojourner at San Diego, California, and noticed their arrival at Whatcom, Washington Territory, the last of March following; and I occasionally saw and heard them singing along the coast of the Straits of Fuca to Neale Bay, a few remaining to breed, but the most wending their way farther north. Dr. Coues, in his "Birds of the Northwest," says of their

range, "east to Fort Laramie," and without doubt we may add, Western Kansas, their extreme eastern limit.

At the same time and place I saw in the cottonwoods two pairs of Mocking Birds (*Mimus polyglottus*). From song and action they seemed to be nesting, and I was informed by a gentleman who had resided in the vicinity several years, that a pair nested and reared their young last season; but they were the first "Mockers" he ever noticed there. The birds are common summer residents in Eastern Kansas, but their nesting, or even occurrence, at so great a height in latitude 39°, must be rare and exceptional.—N. S. Goss, *Topeka, Kan.*

A CALIFORNIA BIRD-WAVE.—In the spring of 1877 I was collecting birds in the neighborhood of Campo, San Diego Co., California. This place is about forty-five miles east of San Diego, and near the summit of the range, which is there low—about 2500 feet altitude. On April 27 I had a very good chance to observe a migration in one particular locality. The place seemed to be a birds' highway. The narrow, brush-covered valley had a strip of evergreen oaks running down the middle. It sloped south, and a couple of miles below fell into a deep cañon crossing it at right angles. On each side were low mountains, contracting the valley to less than a quarter of a mile in width. A strong west wind was blowing across the valley. An almost constant stream of birds was passing northward along the *windward* side of the strip of oaks, keeping close to the tops of the brush.

The weather for several days previous had been cold and stormy, but was now clear and warm, and the migrants seemed disposed to make up for lost time. They flew steadily along at a business gait, seldom stopping to feed, then only hurriedly, making short stops usually of but a few seconds and working north all the time. *Dendræca occidentalis* was perhaps the most numerous, coming by twos and threes, and even half a dozen together. The high wind made their flight very erratic, and I found it impossible to shoot them on the wing. One lit on the ground among some Chipping Sparrows. *D. townsendi* also was present in small numbers. Hummers of several species were especially abundant, but none stopped. Among them were some very small Hummers, possibly *Calypte costæ*, but they appeared too small for even this species. I fired several times but got none. The balance of the migrants were various common birds.

From memory I should say that a dozen to twenty birds passed each minute, and at one point practically all passed over a space of less than fifty yards in width. The travelling flight of the Hummers was wavy, similar to that of a Woodpecker, and the flight of all the others seemed to partake of the same undulatory character, although that might have been caused by the high wind.—F. STEPHENS, *San Bernardino, California.*

# BULLETIN

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### LIST OF BIRDS OBSERVED IN THE VICINITY OF COLORADO SPRINGS, COLORADO, DURING MARCH, APRIL, AND MAY, 1882.

BY J. A. ALLEN AND WILLIAM BREWSTER.

(Concluded from p. 161.)

54. **Poocetes gramineus confinis**. GRASS FINCH.—First observed April 19. They soon became abundant, frequenting alike the open plains and the borders of thickets.

Colorado furnishes the most typical examples of *confinis* that I have seen. Some of our specimens actually have the bill as slender as that of *Passerculus savanna*. Were the distribution of the form limited to this region it would constitute a strongly characterized variety.

55. **Melospiza lincolni**. LINCOLN'S SPARROW.—More or less frequent in thickets along creeks from April 28 till about May 15.

56. **Melospiza fasciata fallax**. GRAY SONG SPARROW.—A few were observed during the latter part of March and one about April 10. Rare.

57. **Junco hiemalis oregonus**. OREGON SNOW-BIRD.—A single specimen was taken April 26 and another the next day. These were the only ones observed. They were in company with *Zonotrichia leucophrys* and *Z. intermedia*.

Two females, taken respectively April 26 and 27, are apparently referable to *Junco oregonus*, although in many respects peculiar. The ashy of

the throat is not darker than in some examples of *hiemalis*, but its posterior outline is convex, as it should be with *oregonus*, and the ash does not extend along the sides of the body, which are only faintly washed with pinkish-brown. The upper parts are nearly uniform dingy olive-brown, inclining to ashy on the rump, but with no appreciable ashy on the crown or nape, where the brown is of even a lighter shade than on the back.

Mr. Brown has called attention\* to similar specimens from Texas, several of which, now in my collection, are identical with these Colorado ones. I agree with Mr. Brown in considering them intermediates between *hiemalis* and *oregonus*.

58. **Junco annectens.** PINK-SIDED SNOWBIRD. — Very common during March and the early part of April. Last seen April 25.

59. **Junco aikenii.** WHITE-WINGED SNOWBIRD. — A single specimen was shot April 11, the only one positively identified.

A specimen (No. 7518, Coll. W. B.) taken by Mr. Aiken in El Paso County, Colorado, February 24, 1874, is peculiar in having the entire outer webs of the first two primaries, and a broad edging on the outer webs of the next three, snowy white to the tips of the feathers. The secondaries and tertials also, are broadly tipped with white and the wing-bands are exceptionally broad and pure, the general effect of the folded wing being white rather than dark. Elsewhere the coloring is normal.

Among Mr. Aiken's extensive series of these Snowbirds I found no specimens which showed any intergradation between *J. aikenii* and its allies.

60. **Junco caniceps.** GRAY-HEADED SNOWBIRD. — More or less common till about May 1.

61. **Spizella socialis arizonæ.** ARIZONA CHIPPING SPARROW. — Observed daily in small numbers from April 11 till May 8. At the latter date they became much more numerous, being met with in flocks, sometimes of large size, from this time till about May 20. They were especially abundant during a period of cold, stormy weather, lasting from May 8 to 14 in ravines bordered by oak scrub. A flock seen at Austin's Bluffs, May 13, must have contained at least a thousand birds, and flocks containing hundreds were repeatedly met with. There were with them usually a few Brewer's Sparrows.

The essential characters of this race, as compared with *socialis*, seem to me to be its longer tail and wings, lighter ashy about the head and neck, narrower dorsal streaks and the very much paler, more ochraceous ground color of the interscapular area. Weighed by these characters the variety is a constant and easily recognizable one. But in the series before me (embracing about thirty examples) all the other differences which

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\* This Bulletin, Vol. VII, p. 38.

have been claimed prove inconstant. Thus in the majority of specimens the bill is not appreciably narrower, nor the "rufous of the crown lighter and less purplish," while the alleged fine black streaks on the occiput are quite as often absent as in *S. socialis*. The character of the wing-bands also is similarly variable.

62. **Spizella pallida.** CLAY-COLORED SPARROW.—Apparently not common. One was taken May 4 and another May 9. A few were seen May 11.

63. **Spizella breweri.** BREWER'S SPARROW.—Common as early as May 10, when several were taken. They associated with *S. socialis arizonæ*, but formed only an inconsiderable portion of the large flocks above-mentioned. Later they were found in oak scrub.

64. **Zonotrichia leucophrys.** WHITE-CROWNED SPARROW.—First seen April 24, and were more or less common for several weeks, associating in small parties with *Z. gambeli intermedia*.

65. **Zonotrichia gambeli intermedia.** RIDGWAY'S SPARROW.—Probably arrived with the last about April 24, as specimens of each were killed at the same shot April 28. Small parties were met with till the middle of May, at first in dry ravines and oak scrub, but later they resorted to the willow thickets of the creek bottoms. They were much more numerous than *Z. leucophrys*.

66. **Chondestes grammicus strigatus.** LARK FINCH.—Became common May 8, when they were first seen.

67. **Calamospiza bicolor.** LARK BUNTING.—First seen May 13—a flock of about two hundred, all males, flying in a compact body through a ravine in Austin's Bluffs. They immediately became common on the plains near town.

68. **Zamelodia melanocephala.** BLACK-HEADED GROSBEEK.—Appeared May 12, and immediately became common.

69. **Passerina amoena.** LAZULI FINCH.—Two males were seen May 8. Became common May 12.

70. **Pipilo maculatus megalonyx.** SPURRED TOWHEE.—First seen about April 7; gradually became common.

My series of sixteen specimens is a puzzling one. Among the males the majority have the white of the outer webs of the external rectrices confluent with the terminal spaces on the inner webs (a character of *arcticus*); while in all, the bases of the primaries are white on their outer webs and in two specimens this white extends uninterruptedly along the web to the tip of the feather, thus fulfilling one of the most essential

characters of *arcticus*. On the other hand, nearly half have the scapular spots edged and tipped with black, as in typical *megalonyx*. The length of the claws is variable in different specimens and often variable in the different feet of the same bird. An arbitrary assignment of these males by the characters given in standard descriptions, and without regard to locality, would result in the reference of two to *arcticus*, three or four to *megalonyx*, and a remainder variously intermediate between the two. The four females are all typical of *megalonyx*, with which, rather curiously, the female seems to be better characterized than the male.

Among the *Pipilos* with spotted scapulars three races may be easily recognized:—viz. *maculatus* of Mexico, in which the adult male combines the usual black head and neck with an olivaceous back seen only in the females of more northern forms; *arcticus* of the Missouri region, which has the outer webs of the spotted scapulars and of the outer rectrices wholly white; and *oregonus* of the coast region of Oregon and Washington Territory, which has the white of the scapulars edged and tipped externally with black and the outer webs of the external rectrices almost wholly black. The variety *megalonyx* is simply an intermediate between *arcticus* and *oregonus*. It cannot be said to have any distinctive peculiarities and it combines the characters of its allies in such varying degrees over the wide extent of its range that each locality seems to furnish a style of its own. This, to a certain extent, is true also of *arcticus* and *oregonus*, really typical examples of which are comparatively seldom met with. The aberrant ones of both are usually referred to *megalonyx* which has thus become a convenient receptacle, so to speak, of everything that is *not* pure *arcticus* or *oregonus*. Hence one of the worst muddles which at present exists to confuse the student of North American birds.

One way out of the difficulty would be to suppress *megalonyx* and extend the characters and distribution of *arcticus* and *oregonus*. But the matter cannot be summarily settled, for any arrangement that shall aspire to be final must be based on intelligent study of very extensive material.

71. **Pipilo chlorurus.** GREEN TOWHEE.—Seen as early as April 27, but was not common till about May 8; were then abundant till about May 16. In June were found breeding abundantly on West Monument Creek at the edge of the plains. (For notice of an hermaphrodite specimen taken, see this Bulletin, VIII, p. 17.)

72. **Dolichonyx oryzivorus.** BOBOLINK.—A single specimen was brought to Mr. Aiken May 18, and another May 23; two others reported as seen. But two specimens were previously known to Mr. Aiken as having been killed here.

73. **Molothrus ater.** COWBIRD.—Apparently not common.

74. **Agelæus phœniceus.** RED-WINGED BLACKBIRD.—



Common in flocks from March 21 till about May 15, when they apparently dispersed to breed.

75. **Xanthocephalus icterocephalus.** YELLOW-HEADED BLACKBIRD.—An adult male was shot May 2, and several females were seen on the following day. We were informed that they occurred in numbers at a ranch twelve miles south of Colorado Springs.

76. **Scolecophagus cyanocephalus.** BREWER'S BLACKBIRD.—Common in flocks after April 25, frequently associated with Redwings.

77. **Sturnella magna neglecta.** WESTERN MEADOW LARK.—Very common. Seen as early as March 20; doubtless winters.

78. **Icterus bullocki.** BULLOCK'S ORIOLE.—Arrived May 12, and immediately became common.

79. **Corvus corax?** RAVEN.—Two birds seen flying at a distance April 7, were apparently of this species, but may have been *C. cryptoleucus*, formerly common here, according to Mr. Aiken, but now rare.

80. **Gymnocitta cyanocephala.** BLUE NUTCRACKER.—Several small flocks, very restless and shy, were seen in April and the early part of May.

81. **Pica rustica hudsonica.** MAGPIE.—Resident. Small flocks were seen in March, and single pairs here and there in April and May.

82. **Cyanocitta stelleri macrolopha.** LONG-CRESTED JAY.—Very abundant in the wooded creek bottoms till about May 17, when they apparently retired to the foothills and mountains to breed. Several pairs were seen daily during the breeding season on the West Monument, at the edge of the foothills.

83. **Aphelocoma woodhousii.** WOODHOUSE'S JAY.—Not infrequent, but wary and difficult to approach. Began nesting the last week of April.

84. **Eremophila alpestris leucolæma.** WESTERN HORNED LARK.—An abundant resident, frequenting in winter the outskirts of the town as well as the adjacent plains. A nest with two fresh eggs was taken about April 1; full-fledged young were seen April 22 and later.

A large series, taken after the beginning of the breeding season and

hence representing the resident form, shows only a limited amount of individual variation, the characteristic style of color and markings being very uniformly presented. The general coloring is very pale—quite up to the standard of typical *leucolæma*, and the peculiar pinkish of certain parts is bleached to a nearly obsolete tint. The black shield on the breast is restricted to the minimum size, but the black bar on the crown is always at least twice the width of the white on the forehead, or quite as broad as in *alpestris* and *chrysolæma*. The throat is usually pale yellow but there is never any yellow on the breast, and rarely any on the forehead or sides of the head. Only one example has a pure white throat, but in several the yellow is restricted to a mere tinge on the chin.

These specimens are uniformly smaller than eastern examples of *alpestris*, and hence smaller than typical examples of *leucolæma* which, according to Dr. Coues, should be about the size of *alpestris*. The measurements of an average Colorado specimen are as follows: Wing, 4.20; tail, 2.98; tarsus, .82; culmen from feathers, .46.

In "Birds of the Colorado Valley" (p. 187), Dr. Coues gives the breeding range of *E. leucolæma* as "plains of the United States, north of about 40°," and refers all the birds which breed south of this parallel, to the eastward as well as westward of the Rocky Mountains, to var. *chrysolæma*. This arrangement seems to me questionable. In a series of nearly one hundred Horned Larks from various points on the plains east of the Rocky Mountains, I find only a slight variation with latitude. There is, to be sure, a gradual diminution in size from north to south but this is not accompanied by any decided changes of color, and, making allowance for local variations, the region at large, between the Rocky Mountains and the Mississippi River and the British and Mexican boundaries, furnishes a style which in its generally pallid coloration and restricted markings fulfills the essential characters of variety *leucolæma*. Furthermore the Horned Lark of Colorado and New Mexico (represented in my series by breeding specimens from Santa Fé), is a widely different bird from the bright-colored form which we get from California, and which passes current as typical *chrysolæma*. Whether this California race is really identical with the *chrysolæma* of Mexico or not I have no present means of judging, but if it be so, the alternative with the birds just discussed is to call them all *leucolæma*, or to separate the southern representatives under a new name. If the latter are true *chrysolæma* the California form must be re-named. In either case the California and Colorado forms cannot be considered identical.

The proper position of the Horned Larks which breed east of the Mississippi in the United States is also a matter that requires further investigation. Such specimens have been usually referred to *alpestris*, but all that I have differ considerably from that form. Four examples taken at Ann Arbor, Michigan, have scarcely any yellow about the head, and in one of them the throat and chin are pure white. Specimens from Southern Illinois are rather smaller and richer colored, but still

paler than Atlantic Coast birds. On the whole all of these specimens seem to me to be nearer *leucolæma* than *alpestris*. If the breeding range of *leucolæma* could be extended, without too much violence, to embrace the whole of the United States east of the Rocky Mountains (and perhaps of the Sierras as well), and that of *alpestris* proper restricted to regions north of our northern boundaries the case would be simplified. But the material which I have examined, although suggesting some such arrangement, is by no means extensive enough to warrant its serious proposal here.

85. **Tyrannus carolinensis**. KING BIRD. — Arrived May 10. Not uncommon in suitable localities.

86. **Tyrannus verticalis**. ARKANSAS FLYCATCHER. — Common. Abundant for several days on its first arrival, May 8.

87. **Tyrannus vociferans**. CASSIN'S FLYCATCHER. — A few seen with the preceding May 8 to 12.

88. **Sayiornis sayi**. SAY'S FLYCATCHER. — Arrived March 30; were frequent in the town and elsewhere till May 8, when for a few days they were abundant. Later they were much less common, — a pair here and there where they found favorable breeding sites, usually the outbuildings of ranches.

89. **Contopus borealis**. OLIVE-SIDED FLYCATCHER. — First seen May 17, when a pair was shot and others were seen. Occasionally observed later.

90. **Contopus virens richardsoni**. WESTERN WOOD PEWEE. — Taken May 18 and seen occasionally later. Common in summer on the West Monument.

91. **Empidonax minimus**. LEAST FLYCATCHER. — One taken May 4 and another May 9 were the only ones identified.

92. **Empidonax obscurus**. WRIGHT'S FLYCATCHER. — First observed April 25. Numerous specimens were taken later, it being, at least during the first half of May, the common *Empidonax* of the region.

93. **Empidonax hammondi**. HAMMOND'S FLYCATCHER. — Arrived a little later than the preceding and was rather less common.

94. **Empidonax flaviventris difficilis**. WESTERN YELLOW-BELLIED FLYCATCHER. — A single specimen taken May 20.

95. **Antrostomus nuttalli**. NUTTALL'S WHIPPOORWILL. — A single specimen was shot May 3 in Austin's Bluffs — the only one met with in our numerous excursions in April and May, although probably not rare during the latter month in suitable localities. During the breeding season they were heard every

evening on the West Monument, and not infrequently came close to the house at dusk, after the manner of the common Whippoorwill in the east.

96. **Chordeiles popetue henryi.** WESTERN NIGHT-HAWK.—Abundant. Arrived about June 1.

97. **Cypselus saxatilis.** WHITE-THROATED SWIFT.—A few were seen in the Garden of the Gods, March 24. Before April 10, the next time the locality was visited, they had arrived in full force. On April 7 they were observed flying over the fields near the entrance to South Cheyenne Cañon. Occasionally observed later still further out on the plains. In addition to the large colony in the Garden of the Gods, others inhabit the two Cheyenne Cañons and William's Cañon, and doubtless other mountain gorges of the vicinity.

98. **Selasphorus platycercus.** BROAD-TAILED HUMMING BIRD.—First seen May 12. More or less common, but restless and hard to capture.

99. **Ceryle alcyon.** KINGFISHER.—A single individual seen May 10. A few pairs noted later.

100. **Picus villosus harrisi.** HARRIS'S WOODPECKER.—A pair taken May 8 and a few others seen in June. Not common.

101. **Picus pubescens gairdneri.** GAIRDNER'S WOODPECKER.—Rare. Only two seen in all our excursions, till a pair or two were met with on the West Monument in the breeding season.

102. **Sphyrapicus varius nuchalis.** NUCHAL WOODPECKER.—Not common. A few specimens were taken in April and one seen May 3.

103. **Sphyrapicus thyroides.** BROWN-HEADED WOODPECKER.—A male taken April 5, and a female taken April 15 were the only ones seen.

104. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.—Began to arrive about May 18, but were not common till a week or ten days later.

105. **Melanerpes torquatus.** LEWIS'S WOODPECKER.—Seen occasionally from April 25 till May 12. Also in the breeding season on the West Monument.

106. **Colaptes auratus mexicanus.** RED-SHAFTED WOODPECKER.—Forms of *Colaptes* were more or less common during the last half of March and April, most of the specimens taken,

presenting various combinations of the characters of *auratus* and *mexicanus*. The few taken later proved to be all *mexicanus*, which Mr. Aiken tells us is the resident form, the "hybrids" being migrants.

107. **Asio wilsonianus**. LONG-EARED OWL.—Saw a number of fresh specimens at Mr. Aiken's, killed in March and the early part of April.

108. **Speotyto cunicularia hypogæa**. BURROWING OWL.—Several colonies on the plains within a few miles of Colorado Springs.

109. **Circus cyaneus hudsonius**. MARSH HAWK.—Occasionally seen.

110. **Accipiter fuscus**. SHARP-SHINNED HAWK.—Seen a few times in April.

111. **Accipiter cooperi**. COOPER'S HAWK.—Occasionally seen in April and May.

112. **Falco mexicanus**. AMERICAN LANIER FALCON.—Several pairs seen in April.

113. **Falco sparverius**. SPARROW HAWK.—Common.

114. **Falco richardsoni**. — Several Pigeon Hawks were seen at a distance and one adult male near enough to be recognized as of this species.

115. **Buteo swainsoni**. SWAINSON'S BUZZARD. — Not common.

116. **Archibuteo ferrugineus**. FERRUGINEOUS ROUGH-LEGGED BUZZARD.—A few seen but none taken.

117. **Aquila chrysaëtus**. GOLDEN EAGLE. — Frequently seen. An eyrie was discovered near the entrance to North Cheyenne Cañon, from which young were taken about June 1.

118. **Cathartes aura**. TURKEY BUZZARD. — Rare. Only a few times observed.

119. **Zenaidura carolinensis**. CAROLINA DOVE.—Abundant. Arrived April 20; found nesting May 15, on the ground.

120. **Ægialites vociferus**. KILLDEER PLOVER. — Not common. First seen March 27.

121. **Ægialites montanus**. MOUNTAIN PLOVER. — Not uncommon. First observed April 19. A perfect egg was taken from a female shot May 9.

122. **Macrorhamphus griseus scolopaceus**. WESTERN RED-BREASTED SNIPE.—Saw one example taken May 9.

123. **Ereunetes pusillus**. SEMIPALMATED SANDPIPER.—Saw fresh specimens at Mr. Aiken's, taken May 1.

124. **Symphemia semipalmata**. WILLET.—A few were taken by gunners near Colorado Springs May 1 to 10.

125. **Rhyacophilus solitarius**. SOLITARY TATTLER.—Fresh specimens were brought to Mr. Aiken May 1.

126. **Tringoides macularius**. SPOTTED SANDPIPER.—Not common. First seen about May 1.

127. **Bartramia longicauda**. BARTRAMIAN SANDPIPER. Large numbers were brought in by gunners April 28.

128. **Gallinula galeata**. FLORIDA GALLINULE.—Saw one in the flesh taken May 9.

129. **Anas boschas**. MALLARD.—Saw specimens taken May 9.

130. **Querquedula cyanoptera**. CINNAMON TEAL.—Saw specimens taken by gunners May 9.

131. **Spatula clypeata**. SHOVELLER.—Saw a few taken by gunners May 9. These three species of Ducks were quite numerous at a few favorable points during the early part of May.

132. **Larus delawarensis**. RING-BILLED GULL.—Rare. One was shot near town during the first week in May.

133. **Sterna forsteri**. FORSTER'S TERN.—Taken at rare intervals, according to Mr. Aiken.

134. **Podiceps auritus californicus**. AMERICAN EARED GREBE.—Saw a specimen in the flesh at Mr. Aiken's, killed May 1.

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## BIRDS OF THE LOWER URUGUAY.

BY WALTER B. BARROWS.

(Continued from p. 143.)

60. **Phylloscartes ventralis** (*Temm.*).—Among the low bushes bordering the streams this bird was noticed several times in July. Owing to its diminutive size and sober coloring it was probably often overlooked and may have been much more plenty than it seemed.

61. **Hapalocercus flaviventris** *Lafr. et d'Orb.*—Abundant in summer in wet marshes and among the rank grass and rushes about ponds and streams. Its rasping notes, energetic movements, and yellow underparts make it quite conspicuous, although one of the smallest species taken. It certainly breeds here, and doubtless also as far south as Carhué, many individuals being seen near that place in March, 1881, but I was unable to learn anything of its nesting habits.

62. **Serpophaga subcristata** (*Vieill.*).—This tiny Fly-catcher much resembles in general habits our own Least Fly-catcher (*Empidonax minimus*), but its motions and notes are much less energetic. It was noticed only in summer and always among trees or bushes. Nests were taken from October 14 until late in November. They were all similar in material and construction, being made of various cottony fibres, wool, and fine hair, and seated among thorny twigs, usually in a fork and at distances from the ground varying from three to fifteen feet. The eggs were commonly three, white, with a buffy tint, and unmarked.

63. **Serpophaga nigricans** (*Vieill.*).—During the cool weather—from April to September—this plain but pretty species was found among the rushes of every marsh and stream which was visited, both at Concepcion and further south. It seemed particularly fond of the rushes, and among these frequently half a dozen were in sight at once, spreading and flirting their tails and making short sallies for passing insects, always uttering their characteristic *chuck*, which was the only note heard.

Very few remain at Concepcion through summer, and those which do are found most often among the interlacing roots and half-fallen bushes along the river margins. The only nest which I found was a bulky structure composed largely of dark, fibrous moss mixed with grass and lined with finer material of the same kind. It was half swung, half seated on a leafless branch which drooped from the roof of one of those cobwebby, natural arbors formed by masses of vines striving to cover up and hide the bushes which they have killed. This nest, with its three white eggs and the parent bird, was secured at Concepcion, December 7, 1880. It was close to the undermined bank of the stream where it could only be seen from a boat passing close under the overhanging bushes.

64. **Cyanotis azaræ** (*Naum.*).—For a few days only during the spring migration (about September 1) at Concepcion the reeds, flags, and water-loving shrubs were fairly alive with these little gems. They were again met with in some numbers on the Pigué and at Carhué the last of March and first of April following. Of their summer home I know nothing. The older name, *Regulus omnicolor*, suggests much which is true of the bird. In color he combines black, white, lemon-yellow, olive-green, deep velvety blue and strongest ruby-red. In habit he reminds one forcibly of both Warbler and Kinglet, and, like the latter, he often hovers before the tip of a flag or reed to pick out some minute grub, or darts off to snap up with ease some passing gnat. In spring he has quite a sprightly little song, not very unlike that of our Redstart (*Setophaga ruticilla*).

65. **Elainea albiceps** (*Lafr. et d'Orb.*).—Three males were taken at Concepcion during the last half of August, 1880, and one or two others were observed, but it must be one of the least abundant Flycatchers at that point.

66. **Elainea modesta**.—The only specimen taken was a female which was shot from a nest at Concepcion November 30, 1880. The nest was a shallow affair built of twigs and roots, and placed on the horizontal branch of a straggling tree about five feet from the ground. It contained two eggs which were white, sparsely spotted with brown.

67. **Pitangus bellicosus** (*Vieill.*). BIEN-TE-VEO (I-SEE-YOU-WELL).—Almost the first bird which attracts a stranger's attention as he rides out into the country. The loud, unmusical cry salutes him from every grove or willow-clump and the bird himself is frequently seen directing his heavy, undulating flight from one tree to another. Grasshoppers and other clumsy insects are frequently taken on the wing, but quite as often the bird alights to pick them up from the ground. Most of the birds have nests as early as October 5, but they may be found with fresh eggs as late as the middle of December, and at all times between these dates. Doubtless two broods are often reared, but as the birds suffer much from the depredations of opossums and large lizards, many of the later nests are only second or third attempts to raise a family. The nest is a bulky and conspicuous object formed of a great variety of soft materials, among which grass and wool are always found. It is often more than a foot in diameter and



sometimes perfectly spherical, though oftener of a depressed globular form, and with a large hole in the side, which is rarely round or neatly finished. The site of the nest seems to be selected with some care and doubtless with some important end in view, though what it may be I cannot say, unless it have reference to the visits of the enemies above alluded to. At all events a very large proportion of the nests are placed on trees or bushes which either extend directly out over water or else overhang some bank, bluff, or abrupt depression so that it is often difficult for a person to examine the nest even when it is not twenty feet in a direct line from the root of the tree. Out of at least twenty-five nests examined, about two thirds overhung the water and were reached by standing up in a boat and drawing down the branch or branches which held them. Of the remainder, only two or three were built on trees which stood on level ground.

The eggs are usually five in number, sometimes but four, and often only three, in nests found in November or December. In color they vary from pearly-white to buffy-white, dashed more or less thickly with spots of brown or black. We did not meet with this bird at Azul or further south, and I believe it is never found far from water, or in regions where timber is very scarce.

68. **Myiodynastes solitarius** (*Vieill.*).—The first specimen of this fine Flycatcher which I saw was brought to me by a boy who killed it with a rubber "sling" among the Paradise trees in the Plaza at Concepcion. This was on November 26, and only two more specimens were secured in the next month's collecting, though several others were observed. They kept mostly among the large trees along the river banks where they may perhaps breed, though their proper home is further up the river in Paraguay and Brazil.

69. **Myiobius navius** (*Bodd.*).—A rather scarce spring migrant occurring singly or in pairs during September and October. It was usually found among thorny bushes in comparatively open and wet ground.

70. **Pyrocephalus rubineus** (*Bodd.*). BRASA DE FUEGO (COAL OF FIRE) and CHURRINCHE. (This latter name is also applied to any of the other small Flycatchers, but I could not find out what it signified.)—The Vermilion Flycatcher is an abundant summer resident at Concepcion, arriving about the

middle of September and leaving soon after the first of April.

The nest is built the last of November or first of December. It is usually made of twigs, grass, etc., and there is almost always some attempt at concealment, made by the addition of bits of bark and moss to the outside. One found December 1, 1879, was built on the horizontal stalk of a half dead cactus (*Opuntia*) which stood in an open, sandy field at a distance from any trees. It was remarkably shallow and the two eggs which it contained were exact miniatures of heavily spotted eggs of the Common Tern (*Sterna hirundo*). Other nests, though better sheltered than this one, were always in comparatively exposed situations, on the horizontal limbs of trees and seldom more than four or five feet from the ground, yet they were not easy to find, even after the parents had shown by their anxiety that they could not be many yards away. I never started the male from the eggs, but always the female.

71. **Myiarchus tyrannulus** (Müll.).—First seen November 20, 1880; afterwards occasionally and in pairs until the first week in January, 1881, when I left Concepcion. On December 28, I found a loose nest of hair, feathers, etc., in a hollow stub five feet from the ground. It contained three eggs which in color and markings were precisely like those of *M. crinitus*, but a little smaller.

72. **Tyrannus melancholicus** Vieill.—This wanderer is not an uncommon summer resident at Concepcion where I found a straggling party of a dozen or more November 1, 1879. December 20, 1880, a nest with three eggs was taken from a slender bush which stretched out over one of the narrow river channels between the islands. The nest was compactly built of twigs, grass, and roots, and would easily have passed for an average nest of the Kingbird (*Tyrannus carolinensis*). The eggs were white, sparsely splashed with several shades of brown.

73. **Tyrannus aurantio-atro-cristatus** Lafr. et d'Orb.—A not very abundant summer resident, but one not easily overlooked, owing to its habit of perching on the topmost twig of any tree on which it alights, making forays from time to time when tempted by its winged prey. A nest found December 28, was a rather careless structure of twigs and roots placed among the thickest branchlets of a mimosa at a height of about eight feet. It contained two eggs (besides one of the Cowbird),

which were very similar to those of *Milvulus tyrannus*, but rather smaller.

74. ***Milvulus tyrannus* (Linn).** TIJERITA (LITTLE SCISSORS, in allusion to the tail).—By far the most abundant Flycatcher which breeds at Concepcion. Arriving early in October, it breeds during November and December, and leaves for the north again before April 1. It was met with at Azul on January 31, 1881, and a single one was seen at Bahia Blanca February 9.

75. ***Pachyrhamphus*, sp. incog.**—Three males of a beautiful species probably belonging to this genus were taken at Concepcion during November, 1880. They were shy and silent, moving leisurely from one low tree to another along the borders of the streams.

76. ***Phytotoma rutila* Vieill.**—An abundant bird among shrubbery everywhere, especially in winter. Gravelly localities where the mimosas and other thorny shrubs alternate with the melon and prickly-pear cactuses and where there are occasional patches of brambles and creeping vines overrunning all, are favorite resorts. Here the brick-red breast of the male is a rather conspicuous object as he sits on the top of some low bush uttering from time to time that characteristic note which has been well likened by Hudson to the bleat of a new-born lamb. The nest, which may be found late in September or early in October, is quite frail and is commonly well hidden in the green interior of a prickly bush, or a mass of twining vines. It is built mostly of fine twigs and finer rootlets and in it the bird deposits usually three bluish-green eggs with brownish flecks. The birds feed largely on green leaves of various kinds with perhaps some berries and a few insects.

77. ***Geositta cunicularia* (Vieill.).**—Hardly more than a winter visitor at Concepcion, though a pair seen October 26 appeared to have eggs or young. In winter, however, it is very abundant and may be seen running about singly or in pairs on dry, grassy or gravelly places. It is strictly terrestrial and when running about singly it may be driven before one like a chicken. It has a rolling call similar to that of the Downy Woodpecker (*Picus pubescens*) but weaker, and a nervous way of flirting its wings and raising and dropping the tail which is common to many other birds of this group. It was abundant at Bahia

Blanca where it was occasionally seen running over the roofs of the houses. Of its breeding habits I know nothing, but most of the birds undoubtedly breed further south.

78. **Furnarius rufus** (Gm.). HORNERO (OVEN-BUILDER). —This bird has been so often and so thoroughly described that I do not feel like saying much about it. Its familiarity with man, its curiosity, its piercing notes and its strange, dome-shaped mud nest are all well known. At Concepcion it is one of the commonest residents and its nest may be seen in almost any street.

The nest is built of such mud as can be found near at hand, and if the mud contain grass-roots or similar fibres so much the better, but I do not think the birds worry themselves much about the quality of the materials. Although the eggs may not be laid until September or October, the birds often begin work on the nest as early as the middle of June, thus occupying three months or more in its completion. In fact I doubt if there is any month in the year when one cannot find Oven-birds at work on their nests. If the weather is dry they suspend work for a week or two until a shower refills the muddy pool from which they draw their building material, when they go on leisurely as before. This is the case only in winter, and when there is nothing to cause haste. In spring and summer the case is entirely otherwise; a nest may then be begun and finished within a week. But a winter-built house is usually much the best, and not a few such withstand the rain and heat for a year or more if not sooner pulled down by boys, iguanas, or birds of prey. The clayey mud bakes almost to brick and it is no easy matter even to break out a hole large enough to extract the eggs. The nests are rather less than a foot in greatest diameter, and though the eggs are not visible from the entrance the common statement that there is an "ante-chamber" to the nest seems to me not quite accurate. The nest is built very much like a spiral shell, and if one could remove the inner whorls from such a shell as *Ampullaria* he would have quite a fair miniature of the Hornero's nest. The eggs are seldom more than three in number, and are originally pure white, but being laid directly on the muddy floor of the nest they soon acquire about the same color. I have taken them from September 16 until January 15, but the larger number are, I think, laid during October.

79. **Upucerthia dumetoria** *Geoffr. et d'Orb.*—A few of these were met with on the crest of a little hill about three miles from the desolate little Indian village of Puan. In general habits they seemed to resemble *Geositta* more closely than any other bird, but were more frequently on the wing, besides differing totally in size and aspect from that bird.

At Carhué a few more were seen on April 6; but they were very shy and nothing was added to our knowledge of them there.

80. **Cinclodes fuscus** (*Vieill.*).—An abundant bird at Concepcion through the cold weather, frequenting sandy or muddy flats and avoiding bushy or grassy ground. In general appearance they remind one not a little of our smaller Thrushes (*T. fuscescens*, *pallasi*, etc.), but of course the resemblance is only superficial. They were often seen in scattered flocks of several hundred, or, to speak more correctly, several hundred were seen at the same time on a flat only eight or ten acres in extent, and after one or two had been shot the rest disappeared together, but not all in the same direction or in any order which could be called a flock.

They were rather abundant at Puan and Carhué from March 28 to April 8, but all seemed to be migrating. I know nothing of their breeding habits.

The next twelve species, belonging to the Synallaxine group, are chiefly interesting on account of the remarkable nests which they build. As a rule they are plain, inconspicuous, harsh-voiced little birds, resembling Wrens and Nuthatches in their movements, but with the stick-collecting propensity of the Wren developed to such a remarkable extent that were it not for the practical uses to which it is put we should say it was simply absurd.

These birds are very abundant at Concepcion, their nests being one of the most noticeable features of the landscape. There are places within two miles of the centre of the town where I have stood and counted, from one point within a radius of twenty rods, over two hundred of these curious nests, varying in size from that of a small pumpkin to more than the volume of a barrel. Often a single tree will contain half a dozen nests or more, and not unfrequently the nests of several different species are seen crowd-

ing each other out of shape on the same bush or tree. Most of the smaller species are so similar in color and motion that they cannot possibly be distinguished from each other at a distance of twenty feet. And it can easily be imagined how difficult it is to collect eggs and be *sure* of their identification. The eggs of most species are as much alike as the parents themselves,—often more so, for the eggs are always either white or pale blue, and unmarked; while there is really considerable difference in color and pattern among the birds. The few notes which I have brought together here may seem very scanty as the outcome of work among such wealth of material, but such as they are I offer them with some confidence in their accuracy, for the reason that they *are* few, and that they were not hastily taken.

81. **Phlœocryptes melanops** (*Vieill.*).—We first met with this species near Bahia Blanca in February, 1881. It was here restricted to the rushes bordering the stream, and in suitable localities was quite abundant, but its habit of skulking close along the bank under the cover of the thickest grass and rushes made it a difficult bird to secure. We afterward found it to be abundant along every stream on the pampas which we visited. Bulky, spherical nests, eight or ten inches in diameter and composed of rushes, grass, and mud, were several times found swung amongst the reeds overhanging the water, and doubtless they belonged to these birds, but as it was then late autumn they were all empty and more or less dilapidated.

82. **Leptasthenura ægithaloides** (*Kittl.*). ESPINERO CHIQUITO (TINY THORN-BIRD).—The smallest species of the family, and readily distinguished also by its elongated central tail-feathers and its crest. It has most of the habits of the Titmice, frequently hanging head downward or clinging against the bark of a tree while hammering its bill into the crevices. I do not remember ever to have seen one on the ground. It was quite common about Concepcion, both in summer and winter. A nest found November 6 was built among the thorny twigs of a low mimosa at a height of about five feet from the ground. It was composed of thorny and other twigs with a few tufts of wool, but without any proper lining. In shape it was a short cylinder, about ten inches high by six in diameter; the entrance a small hole at the top, the nest a spherical cavity at the bottom, the two connected by a spiral passageway less than an inch in diameter, which made only

about one complete turn. It contained two tiny white eggs, which were perfectly fresh. Probably more would have been deposited, as most of the other species lay at least three or four.

83. **Synallaxis albescens** (*Temm.*).—An abundant species in thorny hedges or among the masses of dwarfed and spiny bushes which cling to each other so tenaciously amid the general desolation of the sandy barrens. Its note is almost precisely like the common call note of the Pewee (*Sayornis fuscus*).

The nest varies in shape and detail of construction according to the surroundings. It is commonly placed among the thickest meshes of a thorny thicket, and its body is of the shape of an egg placed with its longer axis vertical and the larger end downward. This is a shell made by weaving and locking together twigs and thorns of various kinds, and is usually completed by the massing of a quantity of decaying twigs of larger size on top—presumably to keep the whole dry. This body of the nest is from eight to twelve inches in height, and the eggs are laid either on the bare twigs at the bottom of the cavity, or more rarely on a loose flooring of wool. Entrance is gained by the bird through a long tube which is built on to the nest at a point about half way up the side. This tube is formed by the interlocking of thorny twigs, and is supported by the branches and twigs about it. It may be straight or curved; its diameter externally varies from two to four inches, and its length from one to two feet. The passageway itself is but just large enough to admit the birds one at a time—and it has always been a mystery to me how a bird the size of a Chipping Sparrow could find its way through one of these slender tubes, bristling with thorns, and along which I found it difficult to pass a smooth slender twig for more than five or six inches. Yet they not only pass in and out easily, but so easily that I was never yet able to surprise one in the nest or to see the slightest disturbance of it by the bird's hurried exit.

The eggs are three or four, light blue, and may be found from October until late in December.

84. **Synallaxis phryganophila** *Vieill.*.—Larger than the preceding and less abundant, but found in similar places. The long middle tail feathers, and the black and yellow chin and throat markings distinguish it easily among all its relatives. A nest containing four white eggs, faintly tinted with blue, was found January 26, 1880, in a thorny tree, and some eight feet from the

ground. The nest was quite similar to the one just described, but the cavity in which the eggs were laid was near the *top* of the body of the nest, while the passageway descended from it to the base of the nest, and there becoming external rose gradually to the level of the eggs at a distance of almost three feet.

These two are the only species building these "nests with handles" with which I am acquainted.

85. **Synallaxis striaticeps** *Lafr. et d' Orb.*—Never very abundant, but not uncommon in winter among the thicker trees near the river. It creeps more than the other *Synallaxes*, and in form, color and habits is strikingly like *Lepidocolaptes atripes*—in fact a very good imitation on a small scale. Of nest and eggs I know nothing.

86. **Synallaxis sordida** *Less.* ESPINERO CHICO (LITTLE THORN-BIRD).—One of the commonest species, and found everywhere in low woods or among bushes and cactus plants. The nest, which often contains a peck or more of thorns and twigs, is placed on a bush or low tree, not unfrequently among the bristling stems of the prickly-pear cactus. Its plan is the same as that described under No. 82, but the spiral way leading to the nest cavity is much longer and frequently makes more than one complete turn. The three or four white eggs are laid sometimes as early as October 1, and also as late as December 25. This bird uses rather more wool and other soft substances in its nest-building than any of the species yet described.

87. **Synallaxis sulphurifera** *Burm.*—A single specimen was taken among high grass and sedges on the edge of a bushy swamp at Concepcion, October 2, 1880. Of its habits I know nothing.

88. **Synallaxis maluroides** *d' Orb.*—Found sparingly at Concepcion among reeds and sedges, especially where these grow in water one or two feet deep. Here its harsh, cackling notes frequently seem quite close to you while the utmost patience may not be repaid by a single glimpse of their author. In precisely these localities, and nowhere else, may be found nearly globular nests six or seven inches in diameter formed of grass, reeds, etc., mixed with some mud, but with little in the way of lining. They are bound to the reeds, and each contains early in October three or four clear, pale-blue, unspotted eggs. Although I never saw a bird of any kind enter or leave one of these nests I collected



sufficient circumstantial evidence to implicate the present species in their construction.

89. **Synallaxis hudsoni** *Scl.*—A strictly terrestrial species which does not occur at all at Concepcion. We first saw it at Azul late in January, 1881. The first individuals seen were flushed from the long, dry grass which grew along the bank of the stream at that place. They rose very much like Pipits, for which I at first mistook them, although their note is quite different. We soon found that they were not confined to the long grass near the stream but were equally plenty in the short grass of the pampas. They were afterward met with in all suitable localities on the pampas, and even on the *meseta* of the Sierra de la Ventana at a height of some 2000 feet above the surrounding plain. I know nothing of the nest, but as the birds are only found on the treeless plains we should expect the nest to resemble somewhat that of the species just described.

90. **Placellodorus sibilatrix** *Döring.*—An abundant species among the open woods along the Uruguay and hardly distinguishable at ten paces distance from half a dozen others. Its nest, however, is unmistakable. The birds begin by fixing a few crooked and thorny twigs among the terminal sprays of some slender branch which juts out horizontally from a tree, or rises obliquely from near its base, and around these twigs as a nucleus more are gathered, until by the time the nest has reached the proper size its weight has bent the branch so that its tip points directly to the earth. Nests which are thus begun at a distance of fifteen or twenty feet from the ground are often only two or three feet from it when finished, and a thorough soaking by a heavy rain will sometimes weigh them down until they actually touch. They are more or less oval or cylindrical in shape and commonly about two feet long by twelve or fifteen inches in diameter, and contain from a peck to a bushel of twigs and thorns. The nest cavity within is small in proportion to the size of the nest, and occupies its upper part. It is reached by a more or less direct passageway from below, the external opening being very nearly at the lowest part of the nest, though sometimes a little shelf, or even a pocket, is built on to the side, forming a resting place in front of the door.

The nests vary interminably in size and shape, but are pretty constant in the material used—this being almost always irregular

and thorny twigs of various trees growing in the neighborhood, while the interior is formed of less thorny twigs with some wool and hair. Usually, also, if the material be at hand, a quantity of old, dry horse-droppings is placed loosely on top of the nest and gradually becomes felted into it, rendering it more nearly water-proof. In place of this I have frequently found quantities of broken straw, weed-stalks, twigs, grass, and even chips; all doubtless collected from the ridges of drift which the last overflow of the river had left near at hand. So compactly is the whole nest built that it often lasts more than one year, and may sometimes serve the same pair two successive summers. More often, however, a new nest is built directly above the old one, which serves as a foundation, and occasionally as many as three nests may be seen thus on the same branch-tip, two of them at least being occupied. When other branches of the same tree are similarly loaded, and other trees close at hand also bear the same kind of fruit, the result is very picturesque, yet it is so common that it soon ceases to attract attention, and even among the natives the bird has no distinctive name, being called *Espinero chico* (Little Thorn-bird) or *Caserito* (Little House-builder), names applied indiscriminately to half-a-dozen species.

The eggs, which are white, are laid from October 1 to January 1, but many of the birds work at nest-building all winter, sometimes spending months on a single nest.

91. **Placellodomus ruber** (*Vieill.*)—Nearly twice the size of the preceding, which it much resembles in habits and note. The nest is also quite similar, though never pendent in the same degree. Indeed, it is sometimes built into the main fork of a small tree; but this is unusual. It is commonly placed either *in* a clump of bushes, or else on a branch in the same way as with the preceding species, except that the nest does not *nod* so far, the branch rarely bending below the horizontal. The nest is of about the same size and shape, but is thus placed with its longer axis horizontal instead of vertical, and with the entrance at the end as in the other case. There are commonly two cavities in the nest, one being half open to the weather, and forming the entrance, the other further back and connected with the former by only a short passageway, which in many cases is reduced to a simple hole through a broad partition which alone separates them. The nest cavity is thus about on the same level as the entrance,

but the eggs are never visible on looking in at the orifice. The birds nest at about the same time as the preceding, and the eggs are similar but larger.

92. **Anumbius acuticaudatus** Less. ESPINERO (THORNBIRD).—This well-known bird abounds at Concepcion, as it does almost everywhere in the Argentine Republic, where there are trees or bushes large enough to support its nest. The bird is not larger than our Wood Thrush (*Turdus mustelinus*), but its nest is sometimes four feet in length, with an average diameter of two feet. Probably no nest as first completed would show these dimensions, but as the same nest is used for several seasons in succession its size increases until it may even exceed the above measurements. The bird is rather partial to thinly-wooded districts, and spends more of its time on the ground than do the two preceding species. Like them it builds its nest of twigs and thorns, placing it either on a tree or bush, sometimes low enough to be reached by the hand, sometimes at a height of twenty or thirty feet. The first new nest I ever examined was built in an ombú tree at Buenos Aires and measured about two and one-half feet in height by fifteen inches in diameter.

The longer diameter was vertical and the opening at the top gave access to a passageway, barely large enough to admit the hand, and twisting regularly in a spiral to near the bottom where it enlarged somewhat to form the nest cavity. The spiral passageway made rather more than two complete turns between orifice and nest, and in so doing passed between two branches of the tree so close together as barely to allow the passage of the bird. I have several times seen nests in which these passageways were made to pass completely around the (small) main stems of the trees on which they were built. In other nests the passageway, though never straight, was by no means a spiral, and the longer axis of the nest frequently becomes only slightly raised above the horizontal. Sometimes several nests are joined together and all occupied at the same time, but more often a new nest is to be seen built against an old one, and in the latter a Swallow or other bird will have built its own nest.

Sometimes the four or five white eggs are laid on the bare, clean twigs of the nest; sometimes the whole interior—passage and nest cavity—is well lined with wool and other soft substances. The birds suffer much from both opossums and iguanas, the for-

mer entering by the door, the latter pulling the bottom of the nest out and reaching eggs or young from below. The birds are by no means shy, and when a nest is conveniently situated it is quite easy to catch the bird in the nest after sunset. Fresh eggs may be found from October till January—and the birds spend more or less time in building and repairing nests throughout the entire year.

93. **Homorus lophotus** (*Bon.*). COPETON (BIG-CREST) and CASERO (HOUSE-BUILDER).—The name *Cachalote* assigned by most writers to this bird I have never heard at Concepcion where it is well known by the name *Copeton*. A bird the size of a Blue-jay, with uniform rufous plumage, a respectable crest, an outrageous disposition and voice, and a nest the size of a barrel, is a bird that cannot be overlooked, especially if, as is his custom, he comes attended by a score or so of his immediate relatives and friends.

Like many a more pretentious creature, however, his house is more interesting than himself, and we have only room for a brief glance. His nest is built entirely of sticks, and many of them of goodly size, frequently as large around as your little finger and two feet or more long. These are disposed in such a way as to form a structure three or four feet in length by about two in breadth at the widest part, the whole very much resembling a gigantic powder-flask lying on its side among the lower branches of a spreading tree. It is quite loosely built and the nest cavity is rather indefinite, being any portion of the floor of the nest which the bird selects for the reception of the eggs. These are usually three or four in number, pure white, and are laid from October until January. They can usually be counted through the loose floor of the nest, though sometimes its thickness prevents this. The birds stick closely to the thickest and thorniest trees, and I do not remember ever to have seen one on the ground. Their voices are harsh and discordant in the extreme, and except for their large and curious nests the birds would have little interest even for the collector.

(To be continued.)

## ON A BIRD NEW TO NORTHERN NORTH AMERICA.

BY C. HART MERRIAM, M. D.

Among some birds sent me by Mr. Napoleon A. Comeau from Godbout, Province of Quebec, Canada, is a specimen of the Yellow-green Vireo (*Vireo flaviviridis* Cassin). Mr. Comeau writes me that he found it, dead, near his home at Godbout, May 13, 1883. The specimen agrees well with Baird, Brewer and Ridgway's description of this species except in size, it being considerably smaller than the measurements there given. Its measurements are: wing, 72 mm. (2.83 in.); tail, 48 mm. (1.88 in.); bill, 10 mm. (.40 in.); while Baird, Brewer and Ridgway, in their diagnosis (Hist. N. Am. Birds, I, p. 359), give: wing, 3.15 in.; tail, 2.55 in.; and bill, .41 in. The wing formula in the Godbout specimen is as follows: 2d and 3d primaries subequal; 4th shorter; 1st between 4th and 5th, but much nearer 4th ( $2 = 3, 4, 1, 5$ ). The sides of the breast, axillars, and particularly the crissum, are of a bright sulphur yellow, much more brilliant than in the brightest fall specimens of *V. olivaceus*.

Mr. Robert Ridgway of the Smithsonian Institution, to whom I submitted the specimen, writes as follows concerning it: "The Vireo sent for examination seems to be true *V. flaviviridis* but is unusually small for that species, the smallest example in our series of fourteen skins having the wing 2.90 inches long, the average being a little more than 3 inches."

The northernmost record of *V. flaviviridis* that I have been able to find is that of a specimen procured at Fort Brown, Texas, August 23, 1877, by Dr. James C. Merrill, U. S. A. (Proc. U. S. Nat. Mus., Vol. I, p. 125, 1878).

The route by which this little waif reached the Gulf of St. Lawrence is open to conjecture. My opinion is that it was carried to sea in a storm, and, chancing to fall in with a northward bound vessel, remained about the rigging till within sight of land; and were the vessel bound for Quebec the first land neared would probably have been Point de Monts, only nine miles from the spot where it was picked up, emaciated and dead.

ON AN APPARENTLY NEW GULL FROM  
EASTERN NORTH AMERICA.

BY WILLIAM BREWSTER.

In a recent issue of this Bulletin\* I recorded a supposed specimen of *Larus glaucescens*, from the Bay of Fundy, and Mr. Merrill, on the same page, announced another captured near Grand Menan. At that time neither bird had been compared with typical specimens of *glaucescens*, but both agreed so well with descriptions, especially in the peculiar "washed out" appearance of the primaries (a character said to be diagnostic of *glaucescens*) that there seemed to be no reason for doubting that they really belonged to that species. Moreover, there was nothing at all improbable in the occurrence of *glaucescens* on the coast of New England, for Kumlien had reported it as breeding at Cumberland Sound,† whence it would be likely to follow the Atlantic Coast in its migrations southward. At least so I reasoned at the time, but, as will presently appear, there was more than one hidden flaw in the evidence upon which my conclusions were based.

Shortly after the publication of the notes above mentioned, Mr. Merrill was kind enough to send me his specimen for examination, and at about the same time another, of which I had not previously known, was received from Mr. Everett Smith. Finding that both were similar to Mr. Welch's bird (the Bay of Fundy specimen), and that all three had certain peculiarities not ascribed to *glaucescens*, I determined to investigate the matter further and to this end applied to the National Museum for the loan of an adequate series. Through Professor Baird's and Mr. Ridgway's kindness this series was promptly forwarded, and is now before me. It includes several typical *glaucescens*, both adult and immature; one of Kumlien's supposed *glaucescens* from Cumberland Sound (the only one brought back by him, or at least in the National Collection, I understand); and some examples of *L. leucopterus*. In addition to these specimens I have been able to

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\* Vol. VIII, No. 2, April, 1883, p. 125.

† Contrib. to Nat. Hist. Arc. Am., pp. 98, 99.

bring together from other sources a number of examples of *L. glaucus* and *L. leucopterus*, and two more *L. glaucescens*.

A critical study of this material has resulted in the following conclusions: (1) That the Gulls from Grand Menan and the Bay of Fundy are identical with the Cumberland Sound specimen. (2) That they represent a form distinct from *L. glaucescens*. (3) That this form is not referable to any species or variety now recognized by the best authorities on *Laridæ*.

Before going further it is necessary to revert to a Gull which has given systematists no little trouble; this is *Larus chalcopterus*. The name was instituted\* by Lichtenstein in 1854, without accompanying characterization. In the following year Bruch identified with it a Gull of which he gives the following brief description: † "Wholly similar to the preceding [i. e. *L. leucopterus*] except in the primaries, which are ash-gray with round white terminal spots. The young plumage, as with *L. glaucopterus* [= *L. glaucescens*], is dark gray. Habitat, American Coast of Behring's Straits and Greenland."

This description, as far as it goes, agrees well with the bird which we are about to consider, but let us trace the history of *chalcopterus* a little further.

It was admitted as a valid species by Lawrence in 1858,‡ and similarly acknowledged by Coues in 1862,§ but the latter author has recently united it with *L. glaucescens*,|| remarking that "there is not the slightest likelihood that it is anything more than *glaucescens*, probably in somewhat immature condition."

Neither Lawrence nor Coues claimed to have seen specimens of *chalcopterus*, but Saunders has been more fortunate. He examined Lichtenstein's type, which turned out to be merely an example of *L. leucopterus*. Concerning Bruch's bird he was evidently in doubt, for a ? is prefixed to the reference which is given among the synonyms of *leucopterus*; while the *chalcopterus* of Lawrence and Coues is placed under *glaucescens*.¶

The gist of all this seems to be that the original *Larus chalcopterus* was simply *L. leucopterus*. As to Bruch's *chalcopterus*

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\* Nomencl. Av. Mus. Berol., p. 99, 1854.

† J. f. Orn., 1855, p. 282.

‡ B. N. A., 1858, p. 843.

§ Proc. Phila. Acad., 1862, p. 295.

|| Birds N. W., pp. 622, 624.]

¶ Proc. Zool. Soc. of London, Feb. 5, 1878, pp. 166, 167.

we can at present only speculate, although there are some reasons for believing that it was the same with the bird which Kumlien found at Cumberland Sound. But in view of the uncertainty connected with this point it seems better to re-name the bird, which I do as follows:

**Larus kumlieni** sp. nov. LESSER GLAUCOUS-WINGED GULL.

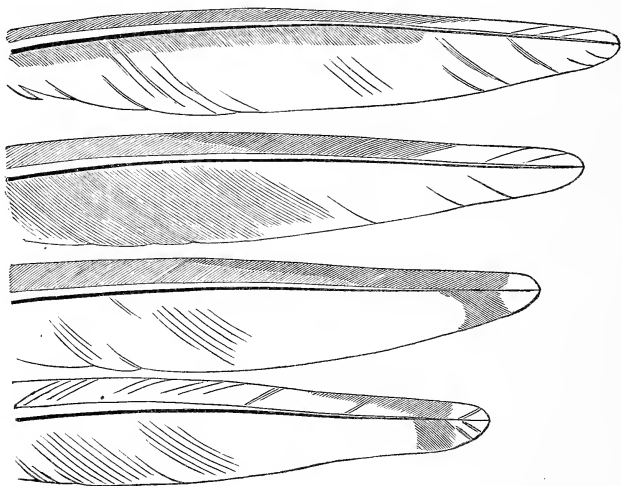
? *Laroides chalcopterus*, BRUCH, J. f. Orn., 1855, p. 22 (nec Licht.).

? *Larus chalcopterus*, LAWR., B. N. A., 1858, p. 843; COUES, Proc. Philad. Acad., 1862, p. 295.

*Larus glaucescens*, KUMLIEN, Contrib. to Nat. Hist. Arc. Am., pp. 98, 99; BREWSTER, Bull. N. O. C., Vol. VIII, No. 2, p. 125; MERRILL, *loc. cit.*

CH. SP.—*Similis L. glaucescenti*, sed minor; magis candidus; pennis candidioribus; colore atro in remigibus angustiore ac magis distincto a partibus candidioribus.

♂, *adult, breeding plumage* (No. 76,225, Coll. Nat. Mus., Cumberland Sound, Arctic America, June 14, 1878. L. Kumlien). Bill short, stout, and comparatively straight, the convexity of the upper mandible slight and the angle of the lower mandible not strongly marked. First primary\*



longest. Tarsus about equal to middle toe and claw. Head, neck, tail, and entire under parts snowy-white; mantle pale pearl-blue, much lighter than in *argentatus* and *glaucescens*, about as in *leucopterus*. Primaries

\* I am indebted to Mr. Ridgway for the drawing from which the accompanying illustration was made.



and secondaries mostly white on their exposed surfaces, with markings of dull slate-gray. Primaries: *First*, snow white on both webs for a terminal space of about two inches, and white to its base on the inner web, except next the shaft; outer web (except terminally) slate-gray, shading insensibly into white near the base of the feather and bordered by a stripe of about its own width, but of a lighter shade, on the inner web next the shaft, which is strongly tinged with the same color. *Second*, with the gray confined to a space of about four inches on the outer web, where it touches the shaft for a distance of scarcely more than an inch, receding from it very gradually towards the base, abruptly in the other direction, at both ends tapering to a point on the margin of the feather; the base of this primary is tinged on both webs with the color of the mantle, which, on the inner web, fades imperceptibly into white about three inches from the tip, but on the outer is deepest at the point of junction with the gray stripe, where the line of demarkation is nevertheless perfectly distinct; there is also an indication of a sub-terminal bar in a transverse spot of dusky on the inner web about half-an-inch from the tip. *Third*, with the gray occupying the entire outer web for a space of rather more than two inches at its basal end, tapering gradually away from the shaft, as in the second primary, but at the other extremity crossing the inner web of the feather and forming a well-defined and continuous sub-terminal bar of about half-an-inch in width, which confines the white to a rounded terminal spot and a short space on the inner web, the remainder of the feather being tinged with the color of the mantle. *Fourth*, with the slate paler and more restricted but still forming a perfect sub-terminal bar. *Fifth*, with the gray confined to two transverse sub-terminal spots on the opposite edges of the feather and separated by a wide space of white next the shaft; this feather is otherwise similar to the remaining primaries, which, with all the secondaries, are perfectly plain and concolor with the back to within about two inches of their tips where their pearly-blue color changes rather abruptly into pure white.

"Iris cream-color; bill yellow with vermilion spot on lower mandible; orbital ring reddish-purple; legs and feet flesh-color" (mem. on label).

*Dimensions.* "Length 24.00"; wing, 16.25; culmen (chord from feathers), 1.75; bill from nostril, .85; do. from gape, 2.60; height at anterior end of nostril, .65; height at angle, .61; tarsus, 2.35; middle toe and claw, 2.27; tail, 6.65.

*Habitat.* Cumberland Sound (Kumlien) and Greenland? (Bruch), migrating south in winter to the Bay of Fundy and Grand Menan.

The following measurements are of Mr. Merrill's, Mr. Smith's, and Mr. Welch's specimens, respectively: ♂, adult (winter pl.). Grand Menan, N. B., Jan. 21, 1883. Length, "23.75"; wing, 17.00; culmen, 1.85; bill from nostril, .89; gape, 2.75; height at nostril, .65; do. at angle, .65; tarsus, 2.30; middle toe and claw, 2.28; tail, 7.22.

Immature, sex? Bay of Fundy, Feb., 1883. "Length, 23.50; extent 50.00"; wing, 15.50; culmen, 1.65; bill from nostril, .89; gape, 2.50;

height at nostril, .56; do. at angle, .60; tarsus, 2.10; middle toe and claw, 2.15; tail, 6.90.

Adult, sex? Bay of Fundy. Wing, 16.00; culmen, 1.88; bill from nostril, .88; gape, 2.75; height at nostril, .66; do. at angle, .66; tarsus, 2.25; middle toe and claw, 2.30; tail, 6.50.

The chief characters which distinguish *L. kumlieni* from *L. glaucescens* are as follows: *Smaller size; a lighter mantle; and very different color and pattern of the primaries.* The primaries of *glaucescens* are essentially concolor with the mantle, and this coloring—uniform nearly to the tips of the feathers, where it changes abruptly into white—gives the folded wing a generally dark appearance relieved only by the rounded white apical spots which are conspicuous on all the feathers. In *kumlieni*, on the contrary, the general effect of the wing is white, the pale pearly-blue of the mantle, although present on some of the feathers, being mostly concealed, and the "pattern" produced by markings many shades darker than any color found elsewhere on the bird; while, owing to the general extension of white, there are usually only two or three primaries which have well-defined apical spots.\*

These characteristics are pretty uniformly maintained among the four specimens before me, but there is some individual as well as seasonal variation. Thus Mr. Merrill's bird differs from the type in having a more decided approach to a sub-terminal bar on the second primary, where a transverse spot of gray on the inner web is continued across to the shaft but fails to connect with a smaller corresponding spot on the edge of the outer web. It also has a dusky spot in front of the eye and some obscure mottling on the crown and nape—probably seasonal (winter) characteristics.

Mr. Smith's specimen is evidently immature. Its entire head and neck, and even the breast, are mottled with dusky, and the bill is greenish at the base. The mantle, however, is perfectly pure and the wings show no traces of immaturity. The bill is much weaker and more depressed than in the other examples. The pattern of the primaries is essentially the same, but there is a greater extension of the gray, especially on the first two

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\* These differences, of course, will only serve to distinguish adults. I have not seen the young of *kumlieni*, but Kumlien states that it is "even darker than the young of *L. argentatus*, the primaries and tail being *very nearly black*." If this be true it can be readily separated from young *glaucescens*, which is much *lighter* than *argentatus*.

feathers, where it occupies a longer space on the outer webs, and on the second primary forms a complete sub-terminal bar.

In Mr. Welch's example the fifth as well as the second primary has a perfect sub-terminal bar, and the sixth shows an interrupted one; while the slate spreads over the greater part of the webs of the first three feathers, except terminally. This extension of the dark color restricts the white spaces at the ends of the second, third, fourth and fifth primaries to rounded apical spots which resemble those of *glaucescens*. There is a further approach to *glaucescens* in the unusually deep shade of the mantle and the bluish cast of many of the light areas on the primaries, but the mantle is still much lighter than in any specimen of *glaucescens* which I have seen.

In many respects *L. kumlieni* bears a curiously close resemblance to *L. leucopterus*. It is of about the same size and proportions, and the shape of the bill is similar, while several of the specimens before me are positively identical in general coloring. The only tangible point of difference seems to be that of the peculiar wing-markings of *kumlieni*. This, of course, is conclusive, but it is a matter of opinion whether it indicates a stronger affinity with *glaucescens*. Welch's bird certainly approaches *glaucescens*, and a large series may establish a complete intergradation; but, on the other hand, my light extreme (the type) suggests a similar transition into *leucopterus*. Were it not for obvious considerations I should suspect that the bird might be a hybrid between *glaucescens* and *leucopterus*. This, however, is highly improbable, and the most rational conclusion seems to be that it is a distinct species, intermediate between *leucopterus* and *glaucescens*, but on the whole perhaps more nearly allied to the latter, to which it bears about the same relation that *leucopterus* does to *glaucus*. All four species are evidently very closely related and form a group of high northern distribution. The range of *kumlieni* can be only conjectured at present, but the evidence indicates that it is probably confined to the eastern, and perhaps also northern, shores of the continent, where it replaces true *glaucescens*, which must be once more restricted to Pacific waters. Now that three examples are known to have been taken near the eastern corner of New England, it should be carefully sought all along our seaboard, for it doubtless occurs there with some regularity in winter, at least during severe seasons.

BREEDING OF THE HARLEQUIN DUCK  
(*HISTRIONICUS MINUTUS*).

BY C. HART MERRIAM, M. D.

The Harlequin Duck is an inhabitant of the southern part of the circumpolar zone which Mr. J. A. Allen, in his admirable paper upon the Geographical Distribution of Animals, has designated the "Arctic Realm"; and is also found in some parts of the "Boreal Province" of the "North-Temperate Realm." At the commencement of the breeding season it retires from the sea-coast to the lakes and rivers of the interior, to return again with its young in autumn, whence, keeping the salt water, it migrates southward a sufficient distance to escape the masses of drifting ice that harass the ragged shores of the North during the winter.

In Siberia it is known to breed about Lake Baikal and in the Bureja Mountains (Radde); in Mantchuria and at various points in the great Stanowoi Range (Von Middendorff); about the Upper Amoor (Von Schrenck); and in Kamtchatka. On the American Continent it has been found breeding along the tributaries of the Yukon in Alaska (Dall); in the interior of the Fur Countries and about Hudson's Bay (Richardson); on the fresh water ponds of Labrador (Audubon); and in the Rocky Mountains within the limits of the United States (in Montana, Coues). It also nests in Newfoundland, Greenland, and Iceland (Kruper).

The accounts of the breeding habits of this species are extremely meagre, but all agree in placing its nest upon the ground, and usually in close proximity to swiftly-running water.

While in Newfoundland last winter I learned that these birds, which are here called "Lords and Ladies," are common summer residents on the Island, breeding along the little-frequented water-courses of the interior. I was also informed, by many different people, that their nests were built in *hollow trees*, like the Wood Duck's with us. Mr. James P. Howley, Geologist of Newfoundland, has favored me with the following response to a letter addressed to him on this subject:

"I received your note enquiring about the Harlequin Duck, but delayed answering it till the arrival of one of our Indians. . . . It is quite true the birds nest in hollow stumps of trees, usually on islets in the lakes or tarns of the interior. They usually frequent the larger lakes and rivers far from the sea-coast, but are also found scattered all over the country."

## THE AMERICAN ORNITHOLOGISTS' UNION.

On September 26, a convention of American ornithologists met in the library of the American Museum of Natural History in New York, to organize an AMERICAN ORNITHOLOGISTS' UNION, pursuant to the following call:—

CAMBRIDGE AND WASHINGTON,  
AUGUST 1, 1883.

To \_\_\_\_\_

DEAR SIR:—

You are cordially invited to attend a Convention of *American Ornithologists*, to be held in New York City, beginning on September 26, 1883, for the purpose of founding an AMERICAN ORNITHOLOGISTS' UNION, upon a basis similar to that of the "British Ornithologists' Union." The place of meeting will be announced hereafter.

The object of the UNION will be the promotion of social and scientific intercourse between American ornithologists, and their co-operation in whatever may tend to the advancement of Ornithology in North America.

A special object, which it is expected will at once engage the attention of the UNION, will be the revision of the current lists of North American Birds, to the end of adopting a uniform system of classification and nomenclature, based on the views of a majority of the UNION, and carrying the authority of the UNION. Other important matters will be doubtless presented for consideration at the first meeting.

It is proposed to hold meetings at least once annually, at such times and places as may be hereafter determined, for the reading of papers, the discussion of such matters as may be brought before the UNION, and the transaction of the usual business of a scientific society.

Those who attend the first meeting will be considered *ipso facto* Founders of the 'AMERICAN ORNITHOLOGISTS' UNION. Active and Corresponding Members may be elected in due course after organization of the UNION, under such rules as may be established for increase of membership. Details of organization will be considered at the first meeting.

Should you favor this proposition, and propose to attend the first meeting, please so signify to any one of the undersigned.

J. A. ALLEN, Cambridge, Mass.,  
*Editor of the Nuttall Bulletin.*

ELLIOTT COUES, Washington, D. C.,  
*Assoc. Editor of the Nuttall Bulletin.*

WILLIAM BREWSTER, Cambridge, Mass.,  
*President of the Nuttall Club.*

This call was sent to a little less than fifty of the more prominent ornithologists of the United States and Canada, selected mainly in reference to their scientific standing, but somewhat with regard to geographical representation, it being desirable to make the gathering as catholic and non-sectional as possible. Of the forty-eight persons invited all but fourteen responded, in each case warmly favoring the project; there is reason to believe that in a large part of the remaining instances the persons invited failed, through absence from home or other cause, to receive the call. Twenty-five of those heard from expressed their intention to attend the convention, and twenty-one were actually present. Following is a list of those in attendance, with the states whence they came: Hon. Chas. Aldrich, Iowa; H. B. Bailey, E. P. Bicknell, D. G. Elliot, Dr. A. K. Fisher, Dr. J. B. Holder, Dr. E. A. Mearns, and Dr. C. H. Merriam, New York; C. F. Batchelder, W. Brewster, C. B. Cory, and H. A. Purdie, Massachusetts; Capt. C. E. Bendire, U. S. A., Oregon; N. C. Brown, Maine; M. Chamberlain, New Brunswick; Dr. E. Coues, Dr. D. W. Prentiss, and R. Ridgway, District of Columbia; T. McIlwraith, Canada; Dr. R. W. Shufeldt, U. S. A., Louisiana; Dr. J. M. Wheaton, Ohio.

The meeting was called to order by Mr. Brewster, and Dr. Coues and Mr. Bicknell were respectively elected temporary Chairman and Secretary. The original call for the Convention was then read, and also the list of persons to whom invitations had been sent, twenty-one of whom were present and responded. On motion of Dr. Merriam a resolution was adopted to the effect: That those who attended the convention be declared Founders of the American Ornithologists' Union, and that this Union be declared to be hereby founded. A communication was then read by the Chair from Professor Baird, expressing his hearty concurrence in the objects of the Convention, and his regret at being unable to be present. The Chair then referred to the eminent standing as naturalists of both Prof. Baird and Mr. Allen, and urged, notwithstanding their enforced absence—the one by pressing official duties, the other by physical disability—that these gentlemen, in view of their connection with the initial steps of organization, be enrolled among the Founders, raising the number of Founders to twenty-three. A motion to this effect was unanimously carried.

A provisional draft of a constitution was presented by the Chair and read by the Secretary. On motion of Mr. Brewster, it was re-read, discussed, voted upon section by section, and finally adopted as a whole. Subsequently one of the articles was reconsidered and modified. As finally adopted, its leading provisions are as follows: Members are divided into four classes: (1) Active, limited to fifty in number, and to be residents of the United States or Canada. (2) Foreign, limited to twenty-five, and to be non-residents of the United States or Canada. (3) Corresponding, eligible from any country, and limited to one hundred. (4) Associate, to be unlimited in number, and residents of the United States or Canada. Eligibility to office and the right to vote are restricted to Active Members, whose annual dues are fixed at \$5.00. Foreign and Corresponding Members are enrolled upon signifying acceptance of membership. Members of all classes are entitled to present papers and take part in scientific discussions.

The officers of the Union consist of a President, two Vice-Presidents, a Secretary and Treasurer (combined in one officer), and five Councillors, who together form a Council. These officers are to be elected annually at the stated meetings of the Union. Stated meetings are to be held each year at such times and places as the Union may determine. Special meetings may be called by the Council as occasion may require. There is also a provision authorizing the Council to issue publications.

Following the adoption of the constitution, an election was held for Active, Foreign, Corresponding and Associate Members, and for officers for the ensuing year. To the list of Active Members, represented by the Founders, were added: W. B. Barrows, G. B. Grinnell, and J. H. Sage, Connecticut; Prof. F. E. L. Beal, Iowa; L. Belding and Dr. J. G. Cooper, California; R. Deane, and Prof. S. A. Forbes, Illinois; Col. N. S. Goss, Kansas; Prof. T. N. Gill, H. W. Henshaw and Dr. J. H. Kidder, U. S. N., District of Columbia; J. A. Jeffries, Massachusetts; Prof. F. H. King, Wisconsin; Dr. F. W. Langdon, Ohio; G. N. Lawrence, and N. T. Lawrence, New York; Dr. J. C. Merrill, U. S. A., Montana; Dr. H. Nehrling, Missouri; E. W. Nelson, Colorado; T. S. Roberts, Minnesota; W. E. D. Scott, Arizona; Hon. G. B. Sennett, Pennsylvania, and W. E. Saunders, Canada. The number of Active Members was thereby raised to forty-seven.

The election for officers resulted as follows: President, J. A. Allen; Vice-Presidents, Dr. Elliott Coues and Robert Ridgway; Secretary and Treasurer, Dr. C. Hart Merriam; Councillors, Prof. S. F. Baird, G. N. Lawrence, William Brewster, H. W. Henshaw, and Montague Chamberlain.

The election of Foreign Members resulted in the choice of the following twenty-one scientists of eminence in Ornithology: Prof. J. V. Barboza du Bocage, Lisbon; Dr. Jean Cabanis, Berlin; Mr. Henry E. Dresser, London; Dr. Otto Finsch, Bremen; Dr. H. H. Giglioli, Florence; Dr. John Gundlach, Cuba; Mr. John Henry Gurney, Sr., Norwich, England; Dr. Gustav Hartlaub, Bremen; Mr. Allan O. Hume, Calcutta; Prof. Thomas Henry Huxley, London; Dr. Ferdinand Krauss, Stuttgart; Prof. Alphonse Milne-Edwards, Paris; Prof. Alfred Newton, Cambridge, England; Prof. William Kitchen Parker, London; August von Pelzeln, Vienna; Count Tommaso Salvadori, Turin; Mr. Osbert Salvin, London; Dr. Hermann Schlegel, Leyden; Dr. Philip Lutley Sclater, London; Mr. R. B. Sharpe, London; Mr. Alfred Russell Wallace, London.

The following twenty Corresponding Members were elected, further elections in this class being deferred: Count Hans von Berlepsch, Hesse, Germany; Capt. Thomas Blakiston, Hakodadi, Japan; Mr. Walter Buller, Wellington, New Zealand; Mr. Robert Collett, Christiania, Norway; Mr. J. J. Dalgleish, Edinburgh; M. le Père Armand David, Paris; Mr. Percy Evans Freke, Dundrum, Ireland; Mr. F. DuCane Godman, London; M. Alfred Grandidier, Paris; Mr. John Henry Gurney, Jr., Norwich, England; Mr. J. Edmund Harting, London; Mr. J. A. Harvie-Brown, Larbert, Scotland; Mr. J. Douglas Ogilby, Ireland; M. Emile Oustalet, Paris; Prof. J. A. Palmèn; Mr. Harry Pryer, Yokohama, Japan; Mr. Howard Saunders, London; Mr. Henry Seebohm, London; Mr. Leonhard Stejneger, Alaska; Mr. Henry T. Wharton, London.

Eighty-seven ornithologists of the United States and Canada were elected Associate Members.

During the session of the Convention, aside from the work of organization and elections, committees were appointed by the Chair to take in hand the consideration of various important subjects, and to present reports upon them at the next annual meeting. The most important of these—"A Revision of the Classification



and Nomenclature of North American Birds"—was referred to a committee of five, consisting of Messrs. Coues, Allen, Ridgway, Brewster, and Henshaw. A committee was also appointed on the "Migration of Birds," to coöperate with Mr. W. W. Cooke in connection with his work on this subject in the Mississippi Valley, and consists of the following gentlemen, with power to add to their number: Merriam, Brown, Purdie, Wheaton, Chamberlain, Grinnell, Henshaw, Cory, Merrill, Fisher, Bicknell, Mearns, and McIlwraith. A committee on "Avian Anatomy" consists of Shufeldt, Coues, Jeffries, and Merriam; another on "Oölogy," of Bendire, Bailey, Brewster, Ridgway, and Merrill. A committee was also appointed "to investigate the eligibility or ineligibility of the European House Sparrow in America," consisting of Holder, Purdie, Chamberlain, Brown, and Bicknell, with power to increase its membership at its discretion. Finally, a sixth committee was appointed to consider the subject of "Faunal Areas," on which were placed Allen, Ridgway, Bicknell, Merriam, Fisher, and Mearns.

Resolutions of thanks were tendered to the Trustees of the American Museum of Natural History, for use of rooms during the session of the Union and for other favors so courteously rendered; to Prof. A. S. Bickmore and Dr. J. B. Holder for many kind attentions personally rendered to the members; and to Mr. E. P. Bicknell for his services on the "Committee of Arrangements" for the meeting, and for the promptness and thoroughness with which he executed the duties of this position. A resolution of thanks was also tendered the signers of the call, in their capacity as a "Committee of Organization," for their zeal and efficiency in issuing the call for the meeting, as well as for the thorough and systematic preparation they were able to make for the speedy and satisfactory transaction of the business incident to the organization of the Union.

The session of the Convention occupied three days, and was marked throughout with the utmost harmony; at adjournment (subject to the call of the Council), hearty expressions of satisfaction with the results of the session were heard from all who had shared in its deliberations. The general good feeling rose to a degree of enthusiasm auguring well for the future work and prosperity of the Union, the organization of which, under such auspicious circumstances, cannot fail to mark an important era in the progress of ornithology in America.

As already stated, the matter of publications was placed in the hands of the Council, by which body the subject was duly weighed after the adjournment of the Union. Naturally the question of an organ, in the form of a serial publication, was the first to present itself, and the impression was general that such a publication must prove indispensable to the work of the Union. It was accordingly voted to establish such a journal, its publication to begin January, 1884. Mr. Allen was chosen editor, to be assisted by a staff of associate-editors, likewise selected by the Council, who are collectively to decide the character of the periodical, and to whom will be intrusted its management.

It may be further announced in the present connection that upon this action being known, it became a question with the members of the Nuttall Ornithological Club whether the Nuttall Club should continue to publish an organ, which, under the new conditions, could only be a rival of that of the Union. The two organizations being virtually one in interest and purpose,—the later being to some extent an outgrowth of the earlier,—and necessarily identical in membership in so far as can be the case where a greater includes a lesser, the Nuttall Club, at a meeting held October 1, voted to discontinue its Bulletin with the close of the present volume, and to offer to the American Ornithologists' Union its good will and subscription list,—to place the Bulletin in the hands of the Council of the Union with its traditions and prestige, with the tacit understanding that the new serial of the Union shall be ostensibly a *second series* of the Nuttall Bulletin. It is therefore to be hoped and expected that the many friends of the Bulletin who have hitherto given it such hearty support will extend their allegiance to the new publication of the Union, freely contribute their observations to its pages, and use their influence to extend its usefulness.

## Recent Literature.

GOSS'S BIRDS OF KANSAS.\*—As is doubtless well-known to most of the readers of the Bulletin, Colonel Goss recently gave to the State of Kansas his large collection of mounted birds, including not only those of the State, but many obtained on various distant expeditions, including visits to Labrador, the Pacific coast, Mexico, and Central America; and he has now very appropriately supplemented his gift by a carefully annotated list of the birds of the State, prepared at the request and under the direction of the State Executive Council. His twenty-six years' residence in Kansas, and his well-known abilities as an ornithologist, give him an unusual fitness for the work, and the expectation these facts naturally inspire of a thoroughly trustworthy list from his hands is fully supported by an examination of the list itself. His commendable conservatism in the matter has led him to exclude a few species previously given as birds of Kansas, the evidence on which they were included not proving to him satisfactory. The extent of his field work may be inferred from the fact that very few species are given on other authority than his own observations, and in these cases he has thoroughly satisfied himself of the correctness of their inclusion. Under these restrictions the list includes 320 species and races, 161 of which are marked as known to breed. The annotations are brief but pertinent, distinguishing carefully the manner of occurrence in the State, but without indicating dates of arrival and departure of the migrants. While we notice a few typographical errors (corrected by an *errata*-slip subsequently issued), the list as a whole is neatly and carefully printed, and attains in general a high grade of excellence. It closes with a supplementary list of 29 species of "Birds to be looked for in Kansas." Doubtless, all of these, and probably others, will ere long be detected; indeed we are surprised that a few of those here given have not already been met with.† The large number of species ultimately to be found (probably not less than 350) in Kansas naturally results not less from its great area (extending as it does through over 400 miles of longitude), than from its having in its eastern third the characteristic birds of the East, while its western half includes those of the Great Plains.—J. A. A.

BECKHAM'S BIRDS OF NELSON COUNTY, KENTUCKY.‡—Mr. Beckham's

\*A Catalogue of the Birds of Kansas. By N. S. Goss. Published under the direction of the Executive Council. Topeka, Kansas: Kansas Publishing House, 1883. 8vo, pp. iv+34.

† Since the above was written a letter from Col. Goss calls our attention to the fact of his accidental omission from the list of *Icteria virens longicaudata*, recorded by Prof. Snow as taken on the Smoky-hill River in Western Kansas, this variety appearing in his enumeration of birds to be looked for.

‡ A List of the Birds of Bardstown, Nelson County, Kentucky. By Charles Wickliffe Beckham. Journ. Cincinnati Soc. Nat. Hist., Vol. VI, pp. 136-147, July, 1883.

List is the first paper on the birds of Kentucky, as such, which has yet appeared, and relating mainly to the birds of the immediate vicinity of Bardstown, and thus to a limited locality, is one of especial interest, although incomplete. Says the author, "The list represents hardly two-thirds of the birds that are doubtless to be found here, but it is thoroughly trustworthy as far as it goes; for no species has been admitted on any but the best of evidence: out of the one hundred and sixty-seven enumerated, the writer is himself responsible for all but eight of them." It is based on observations covering "parts of five years." The list is briefly annotated, and the species known to breed, and also those inferred to do so, are specially distinguished. The list is well printed, and evidently carefully prepared. There is one feature, however, liable to mislead one not familiar with the usual range of a few of the spring and fall migrants, the language used, literally taken, implying that they are summer residents. For example, *Dendraca maculosa*, *D. cærulescens*, etc., are spoken of as migrants, arriving in May and departing in October, whereas, of course, they depart as well as arrive in May, and again in autumn, spending the summer far to the northward of the locality in consideration. Such slips, however, will not seriously impair the value of the list to those who are able to supply, from their general knowledge of the subject, the proper correction.—J. A. A.

NUTTING AND RIDGWAY ON COSTA RICAN BIRDS.—This report\* on a collection of 97 species made at La Palma, on the Gulf of Nicoya, contains interesting field notes by the collector, Mr. Nutting, and various critical and technical notes by Mr. Ridgway, who is also responsible for the identification of the species and the nomenclature adopted. Trinomial designations are frequently employed. The new species and varieties are *Icterus pectoralis espinachi* (Nutting Ms.), and *Myiarchus nuttingi* Ridg. The generic name *Antenor* (preoccupied in conchology) is replaced by *Parabuteo* Ridg. Pages 387-389 contain a revision of the black-capped *Polioptila* of Central and South America by Mr. Ridgway. In the introductory pages is a short account of the mammals of the district investigated.—J. A. A.

MIGRATION OF BIRDS.†—The migration of birds is of late attracting

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\* On a Collection of Birds from the Hacienda "La Palma," Gulf of Nicoya, Costa Rica, By C. C. Nutting. With Critical Notes by R. Ridgway. Proc. U.S. Nat. Mus., 1882, pp. 382-409. Sept. 12, 1882.

† 1. Report on the Migration of Birds in the Spring and Autumn of 1880. By John A. Harvie Brown, F. L. S., F. Z. S., John Cordeaux and Philip Kermod. London: W. S. Sonnenschein & Allen, 15, Paternoster Square. 1881. 8vo, pp. 120.

2. Report of the Committee, consisting of Mr. J. A. Harvie Brown, Mr. John Cordeaux, and Professor Newton, appointed at Swansea 'for the purpose of obtaining (with the consent of the Master and Brethren of the Trinity House, and of the Commissioners of Northern Lights) observations on the Migration of Birds at Lighthouses and Lightships, and of reporting on the same, at York, in 1881.' London: Printed

much attention, not only in Great Britain, but on the continent, and to some extent in this country. It is not only one of the subjects assigned by the British Association for the Advancement of Science to a committee for investigation, with an appropriation of money for carrying on the work, but concerted action has been taken in the matter by the ornithologists of Germany and Austria. Some of the earlier reports on the migration of birds in the British Islands have been already noticed in these pages (Vol. V, pp. 175-177; Vol. VI, p. 174), and we have now to call attention to several late reports and papers on the same subject. The report for 1880 forms a pamphlet of 120 octavo pages. As in the previous year, printed schedules and letters of instruction were sent to 39 stations (lighthouses and lightships) on the east coast of Scotland, the Shetland and Orkney Islands, etc.; to 44 on the east coast of England; to 38 on the west coast of Scotland and the Isles; and to 39 on the west coast of England, or to 160 stations in all, from 106 of which reports were received. Each district is separately treated, embracing preliminary remarks and lists of stations for each, followed in each case by separate reports for each species observed, and by a summary of results. The report for 1881 is of similar scope and character.

As a rule, it is found that the young of the year, in nearly all species, migrate some weeks in advance of the old birds. In spring the migration is, with rare exceptions, performed at night, by easy stages, with none of the great "waves" or "rushes" that are so characteristic of the autumn migration. The birds also appear to fly higher, and, the nights being clearer and shorter, they do not so frequently come in collision with the lanterns of lighthouses and lightships. These collisions also occur between 11 P.M. and dawn of day, instead of in the early hours of night, as is the case in autumn. It is found that in general it is the brightest, whitest, fixed lights—those which can be seen farthest in fog or haze—which attract the most birds. While the data thus far collected are stated to be insufficient to afford any positive conclusions as to the *how* and *why*, the reports contain much interesting matter bearing on the general subject.

The fifth annual report of the German observers, for the year 1880,\* comprising nearly one hundred pages, is presented in the form of an annotated list of 280 species, compiled from the reports of the various observers by Dr. R. Blasius, A. Müller, and J. Rohweder. The notes relate to the nesting of many of the species, as well as to their migrations. The

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by Spottiswoode and Co., New-Street Square and Parliament Street. [1882.] 8vo, pp. 8.

3. Report on the Migration of Birds in the Autumn of 1881. By John A. Harvie Brown, Mr. John Cordeaux, Mr. Philip M. C. Kermode, Mr. R. M. Barrington, and Mr. A. G. More. London: Printed by West, Newman & Co., 54, Halton Garden, 1882, 8vo, pp. 101.

4. Paper on the Migration of Birds upon our British Coasts, read before the Stirling Field Club, on Tuesday, 13th December, 1881, by J. A. Harvie Brown, F. R. S. E., F. Z. S., &c. Stirling: Printed at the Journal and Advertiser Office, 1881. 12 mo. pp. 12.

\* V. Jahresbericht (1880) des Ausschusses für Beobachtungs-stationen der Vögel Deutschlands. Journ. für Ornithologie, XXX Jahrg., Heft 1, Jan. 1882, pp. 18-110.

area of observation includes (1) "Norddeutschland," with 6 observers; (2) "Mittelddeutschland," with 23 observers; (3) "Süddeutschland und Oestreich-Ungarn," with one observer; (4) "Alpenland," with 3 observers. These divisions are subdivided into 12 lesser districts, four of which are unfortunately without observers, while the middle district of Central Germany has 19. The large area included in the observation field is thus quite unequally supplied with observers, while important parts are as yet unoccupied. There are, however, reports from no less than 36 stations, and the *résumé* of the observations taken forms a paper of great interest and value.

While the collection of data on the migration of birds is carried on systematically on a large scale in Europe, little, we regret to say, is being done in this country, aside from the praiseworthy work of Mr. W. W. Cooke of Jefferson, Wisconsin.\* Our great breadth of territory, together with the large number of widely scattered, competent observers, offers unusually favorable conditions for prosecuting an investigation of this interesting subject. What we need is organized effort on a large scale, and we hope it will not be long before persons of leisure and fitness for the work will supplement and extend the work Mr. Cooke has so intelligently begun, till the whole area from the Rocky Mountains at least to the Atlantic seaboard will be suitably covered by observers. As a result of such observations we should at least soon learn with reasonable definiteness just where our hardy migrants winter, and their northern limit of distribution at that season, and also what are the coincident, if not the causative, meteorological and other conditions of the various successive "migratory waves."

Mr. Cooke's scheme contemplates a large number of observing stations, not all of which are as yet filled. From his published reports he appears to have correspondents at 44 stations, distributed as follows: Texas, Florida, Georgia, Arkansas, Kentucky, and Indiana, each 1; Kansas and Mississippi, each 2; Tennessee, Wisconsin, and Minnesota, each 4; Missouri, 5; Iowa, 6; Illinois, 8. The number, except in one or two of the States named, is of course quite inadequate, and there are no reporters from Alabama, Louisiana, and Nebraska, and by far too few in Kansas, and in most of the other states already on the list. We sincerely hope that these deficiencies may be soon filled, and that Mr. Cooke will receive the co-operation he desires and so well merits. If the work goes on, as we sincerely hope it may, the proper elaboration and publication of the results will prove a work of no trifling magnitude, and aid in its prosecution may well be one of the subjects the proposed American Ornithologists' Union may properly feel called upon to consider and encourage.†

\* Bird Migration in the Mississippi Valley. By W. W. Cooke. Forest and Stream, XIX, Nos. 15, 16, 20, pp. 283, 284, 306, 384, Nov. 9 and 16, and Dec. 14, 1883.

Mississippi Valley Migration. By W. W. Cooke. Ornithologist and Oölogist, VIII, Nos. 4-7, April-July, 1883, pp. 25-27, 33, 34, 41, 42, 49-53.

† Since the above was written the American Ornithologists' Union has been formed, and a Committee appointed to co-operate with Mr. Cooke and his corps of observers. (See this issue of the Bulletin, p. 224.)

Mr. Cooke, in his reports, evidently has an eye to condensation, a number in parenthesis (as "(30)"=St. Louis, Mo., O. Widman) standing for the name of the station and observer; his matter is pertinent and in most cases well arranged; while his summaries respecting the movements of particular species, as given in his later papers, show at a glance what are the results attained.—J. A. A.

BEAN'S NOTES ON BIRDS COLLECTED IN ALASKA AND SIBERIA.\*—Dr. Bean, while investigating the fish and fisheries of Alaska in the summer of 1880, devoted incidentally some time to birds. Many of the species were obtained from localities within the Arctic Circle, and several were added to those previously known from Alaska. The list numbers 77 species, with annotations, and in some cases tables of measurements, notably in the case of *Melospiza cinerea*. The paper closes with a table of localities showing where the species were collected. Among the species secured was a specimen of *Eurynorhynchus pygmaeus*. "*Empidonax difficilis* and *Buteo borealis calurus* were obtained for the first time in the territory. The range of *Actodromas acuminata* was extended northward to Port Clarence." *Diomedea melanophrys* was observed (but not taken) "about 1,060 miles west of Cape Mendocino, California," and on this ground has been added by Mr. Ridgway (this Bulletin, Vol. VII, p. 258) to the North American fauna.—J. A. A.

OLD WORLD BIRDS IN THE NATIONAL MUSEUM.—Mr. Ridgway has published † a list of Old World birds in the National Museum with the object to render apparent the desiderata of the Museum among Old World species. The numeration and classification adopted is that of Gray's well-known "Hand-list."—J. A. A.

STEJNEGER ON THE CYGNINÆ.‡—The external and osteological characters are given in detail, with diagnoses of the genera and species, discussions of various points of nomenclature, and a careful exposition of the distinctive feature of the nine species recognized. The affinities of the genus *Coscoroba* are dwelt upon at length, with the result of referring it to the *Anatinae*. Besides the extinct genus *Palæocycnus* (Stejn., gen. nov.), the author recognizes four genera of Swans, namely *Sthenelus* (gen. nov.), *Cygnus*, *Olor*, and *Chenopsis*. The two North American species are assigned to *Olor*.—J. A. A.

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\* Notes on Birds collected during the Summer of 1880 in Alaska and Siberia. By Tarleton H. Bean. Proc. U. S. Nat. Mus., 1882, pp. 144-173. July 25, 1882.

† Catalogue of Old World Birds in the United States National Museum. By Robert Ridgway. Proc. U. S. Nat. Mus., 1881, pp. 317-333, March, 1882.

‡ Outlines of a Monograph of the Cygninæ. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1882, pp. 174-221, figg. 16. July 25, 1882.

TURNER ON *LAGOPUS MUTUS* AND ITS VARIETIES.\*—The author believes, as held by many authors, that the "European birds *mutus* and *alpinus*" constitute "but a single species having the name *Lagopus mutus* Leach, while the American bird may be recognized as a fairly definable race to be called *Lagopus mutus rupestris* (Gm.) Ridg. Four races are recognized, as follows: 1. *Lagopus mutus*, Europe; 2. *L. mutus rupestris*, Arctic America; 3. *L. mutus reinhardti*, Greenland and Labrador; 4. *L. mutus atkhensis*, Atkha Island, Aleutian Chain. The author states that during the time of the summer plumage scarcely a day passes without the general color of the plumage varying by the appearance or loss of some feather, and that it is scarcely possible to find two birds of the same sex, age, and locality which do not differ to an appreciable degree in color. Detailed descriptions and measurements are given of a considerable number of specimens of each race.—J. A. A.

REICHENOW'S "DIE VÖGEL DER ZOOLOGISCHEN GÄRTEN."†—Dr. Reichenow's handbook for bird-keepers is designed to furnish bird-lovers who are not ornithologists with the means of readily identifying such species as are kept in zoological gardens, parks, and aviaries, and seems to be well adapted to that end. The first part, recently issued, treats of 693 species, 235 genera, and 45 families, belonging to the 11 "orders" *Brevipennes*, *Urinatores*, *Longipennes*, *Steganopodes*, *Lamellirotres*, *Cursores*, *Gressores*, *Gyrantes*, *Crypturi*, *Rasores*, and *Raptatores*. Concise diagnoses are given, not only of the species and genera, but of the higher groups, and English and French, as well as German, vernacular names are supplied for the species. No synonyms are cited, even in cases where the names preferred by the author are not those most generally in use, nor on their bibliographical references. In the introduction the author gives a "Vogel-Stammbaum," in illustration of his views of the relationship of the various groups of birds, which he divides first into 7 Series ("Reihen"), and these into 16 orders, with apparently about 100 families. As a popular handbook for German readers of birds kept in parks and aviaries the work seems worthy of generous commendation.—J. A. A.

REICHENOW'S "DIE ENTENVÖGEL DER ZOOLOGISCHEN GÄRTEN."‡—In a paper of 16 quarto pages Dr. Reichenow enumerates the species of *Lamellirotres* (*Anatidæ* and *Palamedeidæ*), giving brief diagnoses of the species kept in zoological gardens, and the characters of the genera subgenera and higher groups, prepared in the interest of practical bird-keepers.—J. A. A.

\* On *Lagopus mutus*, Leach, and its Allies. By Lucien M. Turner. Proc. U. S. Nat. Mus., 1882, pp. 225- , July 29, 1882.

† Die Vögel der Zoologischen Gärten. Leitfaden zum Studium der Ornithologie mit besonderer Berücksichtigung der in Gefangenschaft gehaltenen Vögel. Ein Handbuch für Vogelwirth. Von Dr. Ant. Reichenow. In zwei Theilen. [Theil I.] Leipzig, 1882, 8vo. pp. xxx + 278.

‡ Die Entenvögel der Zoologischen Gärten. Von Ant. Reichenow. Ornithologisches Centralblatt, VII Jahrg., Nos. 1-6. Jan.-May, 1882, pp. 1-5, 17-23, 35-40.



LINDEN ON DOMESTICATION OF WILD DUCKS.\*—After brief reference to the various species of wild Ducks that formerly frequented Lake Chautauqua, Western New York, which have now mostly become rare, Mr. Linden summarizes the results of systematic efforts continued for nearly thirty years by Mr. George Irwin at the above-named locality to domesticate several of the species. These were the Mallard, Dusky Duck, Wood Duck, Blue-winged Teal, and American Swan. All of these bred freely and reared their young in confinement, but the Mallard and Dusky Duck proved the "most tractable for domestication," and readily became transformed into "tamed barn-yard fowl." The Dusky Duck, Mr. Linden states, is fully as domesticable as the Mallard, with which it readily crosses.—J. A. A.

MINOR ORNITHOLOGICAL PUBLICATIONS.—365. *Rarer birds of Massachusetts*. By Arthur P. Chadbourne. *Quarterly Journal of the Boston Zoölogical Society*,† Vol. I, 1882, pp. 4, 5, 20-24, 30-35.—A list of about 80 species, with references to the original authorities for their occurrence. *Mimus polyglottus* is given as doubtfully entitled to a place in the list, "owing to many [of the specimens taken] being escaped cage-birds," the author having apparently overlooked the fact of its having been found breeding at Springfield (see Proc. Essex Inst., IV, p. 67). We may add that we are credibly informed of two later instances of its breeding at Springfield. *Cardinalis virginianus* is placed in the same category, but it is hardly "probable" that all the specimens recorded were escaped cage-birds.

366. *Dendroica pinus in Winter*. By Robert W. Hogg. *Ibid.*, pp. 25, 26.—Record of a specimen taken, and of others seen, in Framingham, Mass., Dec. 5, 1881.

367. *Another Spotted Egg of Empidonax minimus*. By R. Hayward. *Ibid.*, p. 26.—One of a set of three eggs, found at Marblehead, Mass., July, 1880, had "a ring of light brown spots at the larger end."

368. *Baird's Sandpiper at Marblehead, Mass.* By Charles R. Lamb. *Ibid.*, p. 37.—Taken Aug. 15, 1881.

369. *A Third Specimen of the Swallow-tailed Gull (Xema furcatum)*. By C. J. Maynard. *Ibid.*, p. 37.—On the authority of Mr. Howard Saunders of London, but locality of capture not stated.

370. *A List of Birds observed near Bradford, Penn.* By James A. Tuelon. *Ibid.*, I, pp. 47-52; II, pp. 8-11.—(For further notice of this paper see this Bulletin, Vol. VIII, p. 171.)

371. *Ornithological Notes from the Magdalen Islands*. By C. J. Maynard. *Ibid.*, I, pp. 52, 53.—Interesting notes on 8 species, from observations by "A. M. Frazer" [= Frazer]. *Curvirostra leucoptera* in nestling plumage taken June 18-26, 1882.

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\* On the Domestication of some of our Wild Ducks. By Charles Linden. Bull. Buffalo Soc. Nat. Sciences, Vol. IV, No. 2, pp. 33-39, 1882.

† This is the organ, now in its second volume, of a small society of young naturalists, recently established in Boston. Vol. I, 8vo, pp. iv+58, 1882. It is well printed and carefully edited, and contains notes of interest in various departments of Zoölogy.

Volume VII of the "Ornithologist and Oölogist" (March-December, 1882, pp. 97-192; J. M. Wade, editor) contains, besides items about the movements of collectors, notices of new publications, and various short notes about common species, too numerous and of too little importance for notice in our limited space, the following notes and papers (Nos. 372-446):—

372. *American Barn Owl. Aluco flammeus americanus* (Aud.) Ridgw. By B. W. Evermann. *Ornithologist and Oölogist*, VII, pp. 97-98, 109, 110, 166, 167.—Detailed account of its breeding habits, based on the writer's experience, with many measurements of eggs.

373. *The Spotted Owl [Strix occidentalis (Zanthus) Ridg.]*. By Capt. Chas. E. Bendire, U. S. A. *Ibid.*, p. 99.—Description of nest and egg found near Tucson, Ariz., Apr. 17, 1872.

374. *Hooded Warbler. Nesting in Southern Conn.* By J. N. Clark. *Ibid.*, p. 102.

375. *A Collector in Florida.* By Chas. W. Gunn. *Ibid.*, pp. 103, 104.—Contains desultory notes on various water birds.

376. *Clarke's Crow.* By Capt. Chas. E. Bendire, U. S. A. *Ibid.*, pp. 105-107, 113, 114.—Breeding habits, etc., of *Picicorvus columbianus*.

377. *Red-headed Woodpeckers.* By A. H. Helme. *Ibid.*, p. 107.—Large numbers in the vicinity of Miller's Place, L. I., in the autumn of 1881.

378. *Least Bittern.* By M. Chamberlain. *Ibid.*, p. 110.—Its capture at various times near St. John, N. B.

379. *Hints to Collectors.* By J. M. W[hipple]. *Ibid.*, pp. 110, 111, 116-118.

380. *Sea Dove (Alle nigricans).* By W. H. Collins. *Ibid.*, p. 111.—Killed in Detroit River, Mich., Nov. 30, 1881.

381. *Notes from St. John, N. B.* By M. Chamberlain. *Ibid.*, pp. 112, 119, 120.—Notes on 15 species, from the oölogical note book (for 1881) of James W. Banks.

382. *Large-billed Water Thrush.* By F. T. Jencks. *Ibid.*, pp. 114, 115.—Includes record of the capture of five specimens near Providence, R. I.

383. *Death of H. G. Fowler.* By F. S. W[right]. and F. R. R[athbun]. *Ibid.*, pp. 116, 117.—Died at Savannah, Ga., Feb. 11, 1882, of malarial fever, contracted while on a collecting trip in Florida.

384. *Hatching Hawk's Eggs.* By William Wood. *Ibid.*, p. 118.—Under domestic hens.

385. *The Rufous-winged Sparrow.* By Capt. Chas. E. Bendire, U. S. A. *Ibid.*, pp. 121, 122.—On the habits of *Peucea carpalis*, with description of nest and eggs.

386. *Rare Birds in Nova Scotia.* By J. Bernard Gilpin. *Ibid.*, pp. 122, 123.—Various pelagic and southern species noted as taken near Halifax, some of the instances apparently not previously recorded.

387. *Gadwell [sic] Duck in R[hode] I[sland].* By Fred. T. Jencks. *Ibid.*, p. 123.—Shot at Newport, Feb. 26, 1882—its first capture in the State, so far as known to the writer.

388. *Blue Yellow-backed Warbler. Its summer home.* By G. R. C. *Ibid.*, pp. 124, 125.
389. *Great Horned Owls' Nests and Eggs.* By J. M. W[hipple] and J. N. Clark. *Ibid.*, pp. 125, 126.
390. *American Long-eared Owl.* By Chas. E. Bendire. *Ibid.*, p. 126.—Average and extremes of measurement of 37 eggs of *Asio americanus* (Sharpe).
391. *Humming Birds. [Selasphorus alleni] in confinement.* By Mrs. C. M. Crowell. *Ibid.*, pp. 126-128.
392. *Traill's Fly-catcher. Its Nesting Habits in Ohio.* By Oliver Davie. *Ibid.*, p. 128.
393. *Malheur Lake, Oregon.* By Capt. Chas. E. Bendire, U. S. A. *Ibid.*, pp. 129-131, 137, 138.—Description of the lake and of the nesting there of the Great Blue Heron, White Pelican, and Double-crested Cormorant, with measurements of eggs, etc.
394. *Golden Eagle's Eggs.* By Snowdon Howland. *Ibid.*, p. 131.
395. *Birds of Central New York. Addendum to Revised List.* [By F. R. Rathbun?] *Ibid.*, pp. 132, 133.—Species added, 14, raising the total to 250.
396. *Notes from St. John, N. B.* By Harold Gilbert. *Ibid.*, p. 134.—Notes on the Cedar Bird, Golden-winged Woodpecker, Robin, and Bohemian Wax-wing as winter birds, etc.
397. *The Swamp Sparrow.* By W. P. Tarrant. *Ibid.*, pp. 129, 130.—Account of its nesting habits as observed at Saratoga Springs, N. Y.
398. *Curious Nesting Places.* By W. W. Worthington. *Ibid.*, p. 138.—Of Robin and Song Sparrow.
399. *Notes from California.* By W. O. Emerson. *Ibid.*, p. 139.—Chiefly on the nesting of the Anna Humming Bird.
400. *Hawk Incubation.* By F. H. Carpenter. *Ibid.*, p. 141.—Incubation in the Red-shouldered and Cooper's Hawks found to occupy 27 days.
401. *Turkey Buzzard [and] Golden-winged Warbler.* By J. H. Sage. *Ibid.*, p. 141.—The former shot at North Stonington, Conn.; the latter at Portland, Conn.
402. *Eagles in Ohio.* By Oliver Davie. *Ibid.*, p. 142.—List of Golden and Bald Eagles received by the writer during the winters of 1878-79-1881-82, with dates and place of capture.
403. *The Great-Horned Owl in Texas.* By Edgar A. Small. *Ibid.*, pp. 142, 143.
404. *Black-backed Woodpecker.* By N. A. Eddy. *Ibid.*, p. 143.—Believed to be not a rare winter resident of the pineries of Michigan.
405. *Climbers and Climbing. The Staddle.* By J. M. W[hipple]. *Ibid.*, p. 143.
406. *Purple Grackle (Quiscalus Purpureus).* Editorial. *Ibid.*, p. 144.
407. *Nesting habits.—Woodcock and Black Duck.* By J. N. Clark. *Ibid.*, p. 144.—Young Woodcock able to fly May 4, and young Black Ducks seen May 5, at Old Saybrook, Conn.
408. *Large-billed Water Thrush.* By J. N. Clark. *Ibid.*, pp. 145-147.

—Description of nests and eggs and of the breeding habits of the bird as observed at Old Saybrook, Conn.

409. *Great Blue Heronry*. By Morgan K. Barnum. *Ibid.*, p. 147.—At Syracuse, N. Y.; about 270 sets of eggs taken.

410. *Branting at Monomoy [Island, Mass.]*. By Fred. T. Jencks. *Ibid.*, pp. 149, 150.

411. *Prairie Hen. Its Nesting Habits*. By Horace A. Kline. *Ibid.*, p. 150.—At Vesta, Neb.; where "thousands of eggs perish every year" by the late burning of the prairies.

412. *Field Glass [Ornithology]*. By G. R. C. *Ibid.*, pp. 150, 151, 157, 158.—It is to be hoped that this method will be reserved for those "who have no wish, strictly speaking, to become ornithologists or oölogists," and that observations made by persons who have "become acquainted" with birds in this way will never be put in print as a contribution to ornithology. The writer in attempting to teach this system gives an illustration of how to identify birds with a glass, his "Pine-linnets (*Chrysomitris pinus*)" being known by "the prominent and always constant bright yellow rump." Comment is needless. Watching birds through a field glass as a pleasant amusement we would not discourage, but as a method of identifying birds by novices, we do not know of a more excellent illustration of "how not to do it."

413. *Gleanings from Bendire's Letters*. Editorial. *Ibid.*, pp. 153, 154.—Extracts from letters of Capt. Bendire to the editor; they relate mainly to Owls and Waxwings as observed at Fort Walla Walla, W. T., during the winter of 1881-82.

414. *Florida Gallinule*. By Frank S. Wright. *Ibid.*, pp. 154, 155.—Abundant in the Seneca River marshes, N. Y.

415. *Savannah Sparrow*. . . . Editorial. *Ibid.*, p. 156.—Breeding on Plum Island, off the eastern end of Long Island.

416. *Climbers and Climbing. Climbing Irons*. By J. M. W[hipple]. *Ibid.*, pp. 158, 159.

417. *Lapwing (Vanellus cristatus)*. . . . By J. T. T. R[eed]. *Ibid.*, pp. 159, 160.—Its breeding habits, etc.

418. *Common European Heron (Ardea cinerea Linn.)*. By J. T. T. Reed. *Ibid.*, p. 160.

419. *American Long-eared Owl. Our first Owl's Nest*. Editorial. *Ibid.*, pp. 161, 162.

420. *Savannah Sparrow*. By M. Chamberlain. *Ibid.*, p. 162.—Breeding inland in New Brunswick.

421. *Wilson's Black Cap (Wilsonia pusilla)*. By M. Chamberlain. *Ibid.*, p. 162.—Female with the black cap.

422. *European Starling (Sturnus vulgaris Linn.)* By J. T. T. Reed. *Ibid.*, p. 163.—Short account of its habits.

423. *Rose Breasted Grosbeak [in Confinement]*. Editorial. *Ibid.*, p. 164.—Further account of "Jack," a pet bird. (See *anteà*, No. 335, Vol. VIII, p. 177.)

424. *California Winter Songsters*. By W. O. Emerson. *Ibid.*, pp. 165, 166.—Notes on 8 species.
425. *Eggs in a Set*. By N. A. Eddy. *Ibid.*, p. 167.—Relates chiefly to the Fish Hawk.
426. *Snowy Owl (Nyctea scandiaca)*. By J. G. Smith. *Ibid.*, p. 168.—On the prairies of Iowa; smaller and whiter birds in cold winters, darker and larger ones in warm winters.
427. *Black-Crested Flycatcher*. By B. W. Everman. *Ibid.*, pp. 169, 170, 177-179.—Habits, nest, and eggs of *Phainopepla nitens* as observed in California.
428. *Thrushes*. [By Chas. Edw. Prior.] *Ibid.*, p. 170, 171.—Nesting of Wilson's and Wood Thrushes.
429. *Birds of New York*. By C. Hart Merriam, M. D. *Ibid.*, p. 171.—Outline of the plan of his proposed work on the subject.
430. *Late Breeding of the Hermit Thrush in Northern New York*. By C. Hart Merriam, M. D. *Ibid.*, p. 171.—Fresh eggs found August 24, 1870, at Locust Grove, Lewis Co.
431. *Fresh work in an Old Field*. By J. M. W[hipple]. *Ibid.*, p. 173.—Finding of nest and eggs of the Nashville Warbler.
432. *Wilson's Thrush (Turdus fuscescens)*. By C. O. Tracy. *Ibid.*, p. 174.—Nesting habits, and measurements of 6 sets of eggs.
433. *The Bobolink*. By C. O. Tracy. *Ibid.*, p. 173.—Notes decrease of at Taftsville, Vt.
434. *The Ruff (Machetes pugnax)*. By J. T. T. R[eed]. *Ibid.*, p. 175.—Brief account of the species.
435. *Climbers and Climbing*. By D. E. Stone. *Ibid.*, p. 175.—Relates to a former article on the same subject by "J. M. W."
436. *Climbers and Climbing*. Editorial? *Ibid.*, p. 176.—Describes the feats of Herman Ill in climbing trees for birds' nests.
437. *Eggs in a Set*. By Philo Smith, Jr. *Ibid.*, p. 182.—Relates to various species.
438. *The Great American Egg-hog*. By Louis A. Zerega. *Ibid.*, p. 183.—Deploras especially the wholesale robbery of Heronries.
439. *Curious Nesting Places*. By W. W. Coe. *Ibid.*, pp. 183, 184.—Bluebirds building in a chimney, Robins in a Martin box, etc.
440. *The Wood-thrushes (Hylocichla) of New Brunswick*. By M. Chamberlain. *Ibid.*, pp. 185-187. [Also published in the "Canadian Sportsman and Naturalist," III, Jan., 1883, pp. 201-203.]
441. *Tufted Titmouse*. By H. A. Atkins, M. D. *Ibid.*, p. 189.—Three instances of its capture at Locke, Mich., recorded.
442. *Cuckoos*. [By J. N. Clark?] *Ibid.*, p. 189.—Eggs of the Yellow-billed and Black-billed Cuckoos found in the same nest.
443. *Great White Egret (Herodias alba egretta)*. By J. N. Clark. *Ibid.*, p. 189.—Capture of two specimens in Southern Connecticut.
444. *Olive-sided Flycatcher*. By C. O. Tracy. *Ibid.*, pp. 189, 190.—Description of nest and eggs found at Taftsville, Vt.

445. *The Cærulean Warbler*. By J. H. Langille. *Ibid.*, pp. 191, 192.—Description of habits, nest and eggs, as observed near Buffalo, N. Y.
446. *Notes from Colorado*. By D. D. Stone. *Ibid.*, pp. 191, 192.—Describes nests and eggs of the White-crowned Sparrow, "Mountain Mockingbird," "Oregon? Snowbird," "Stellar's [*sic*] Jay," etc. See corrections by Robert Ridgway in *O. and O.*, VIII, p. 13, where the "Mountain Mocking Bird" is said to be Townsend's Solitaire, etc., etc.
447. *The Migration of Birds*. By J. A. Allen. *Scribner's Monthly*, XXII, Oct. 1881, pp. 932-938.—An attempt to present a general summary of present knowledge of the causes and phenomena of the migratory movement, with reference more especially to North American Birds.
448. *Birds of Amherst*.—[By Winfred A. Stearns.] *Amherst Record* (newspaper), June 13, July 11, 18, and 5, and August 8, 1883.—An annotated list of 157 species, containing several records of interest.
449. *The Tragedies of the Nests*. By John Burroughs. *Century Illustrated Monthly Magazine*, XXVI, pp. 681-687, Sept. 1883.—On the destruction of eggs and young by predaceous birds and mammals. Advises the destruction of all red squirrels and weasels in behalf of the birds.
450. *Bits of history of the Great Auk*. [By Winfred A. Stearns.] *Fishkill Standard* (newspaper), Fishkill Landing, N. Y., June 30, 1883.—A good account of the species, compiled from various sources.
451. *List of Birds observed at St. Berthold, D. T., during the month of September, 1881*. By J. W. Hoffman, M. D. *Proc. Boston Soc. Nat. Hist.*, XXI, pp. 397-405, Oct., 1882.—Notes on 58 species. Describes the method of capturing the Bald Eagle practised by the "Eagle Hunters of the Hidatsa and Arikara Indians, namely, by concealing themselves in holes in the ground excavated for the purpose, baiting with a live rabbit or domestic fowl, and seizing the Eagle by the legs when he alights to secure the bait!
452. *Observations of the Nesting Habits of the Guillemots at Bird Rock [Gulf of St Lawrence]*. By Col. N. S. Goss. *Trans. Kansas Acad. of Science*, VIII, 1881-82, pp. 59, 60.—From differences observed in the eggs and habits of the birds the writer believes that *Lomvia ringvia* will prove to be not an individual phase merely of *L. troile*, as now generally held.
453. *Notes on Meleagris ocellata Cuvier (lege Temm.)*. By Geo. F. Gaumer. *Ibid.*, pp. 60-62.—Account of external characters and habits.
454. *Notes on the Habits of the Momotidæ*. By Geo. F. Gaumer. *Ibid.*, pp. 63-66.—Refers especially to *Eumomotus superciliaris*, and the mutilation of the tail, which the birds themselves effect with the bill.

## General Notes.

THE WILLOW THRUSH AND HOLBÖLL'S LINNET IN ILLINOIS.—Mr. Ridgway identifies my No. 1568 as *Hylocichla fuscescens salicicola* (lately described by him in Vol. IV, Proc. U. S. Nat. Mus.). It was shot in a willow tree in my yard, Sept. 16, 1877. It sat silent and motionless. The sexual organs were not distinguishable, having apparently been destroyed by a small white worm found in their place. (This is not the first instance I have noted of birds, *far from their usual habitat*, having this white worm gnawing at their vitals. May this not account for their straggling off?) Mr. Ridgway also identifies No. 4188, ♀, as *Aegiothus linaria holboelli*, which was shot in this city by Mr. Geo. F. Clingman, Nov. 2, 1878.—H. K. COALE, *Chicago, Ills.*

NEST AND EGGS OF MYIADESTES TOWNSENDI.—These being not yet well-known, an account of a recent find may be interesting. The specimens, accompanied by a skin, were presented to me by Mr. Wm. G. Smith, of Buffalo Creek, Jefferson County, Colorado, where they were taken. Mr. Smith writes: "The nest I found on June 18, 1883, in the end of a large hollow fallen log; it was about three feet off the ground and about one foot from the end of the log. The loose material sent with it was placed on the outer side to keep it level. The female was sitting, and I approached within a few feet before she flew off. As there was a Steller's Jay close by, I thought it prudent to take the eggs at once. I put two Brewer's Blackbird's eggs in the nest, and the parent bird took to them as soon as I moved off a few yards. Two days afterward the egg-shells lay upon the ground, most likely the work of the Jay, as I have often known this bird to do. The locality was the side of a rather high hill."

The foundation of this nest is a great quantity of trash, including some bits of stick as thick as one's little finger. Upon this rests the nest proper, constructed chiefly of pine needles, grasses and disintegrated weed-stalks—the whole loose and slovenly, hardly to be handled without coming to pieces, without any well-defined brim or very regular circular disposition of the material. The nest is about six inches across outside; its depth cannot be given, as it merges into the trash of the foundation; the cavity is quite shallow. As sent to me, the whole structure fits pretty closely in a box 10x7x4 inches.

The two eggs differ from each other in color as much as those of the Song Sparrow might, and not distantly resemble Song Sparrow's eggs. The ground is dull white; in one case wreathed about the butt, and elsewhere sparsely sprinkled with dull reddish-brown surface-markings and shell-spots duller still; in the other sample so heavily marked all over with a brighter and more chocolate brown that the ground-color scarcely appears. Neither is noticeable in shape; the size is about 0.95x0.70.—ELLIOTT COUES, *Washington, D. C.*

THE MOCKING BIRD IN WESTERN KANSAS AND THE NORTHERN PHALAROPE IN SOUTHERN WYOMING.—During two seasons' active collecting in the region of Fort Wallace in Western Kansas, I have found the Mocking Bird (*Mimus polyglottus*) not rare, as Mr. Goss (this Bulletin, VIII, p. 188) thought they must be for such an altitude and latitude, but common during the season, and many of them undoubtedly breed there. Frequently when camped under some solitary cottonwood, I have known from one to four of these birds to be overhead among the branches, and that too only a few yards above us. Numerous specimens were obtained and many more might have been. I do not recollect meeting them except along the valley of the Smoky Hill and its principal tributaries.

Although I never took a specimen of the Northern Phalarope in Western Kansas (and I have shot not a few water birds in the very ponds where Mr. Goss had such good success), yet I have seen them in June in flocks of several hundred at Lake Caud in Southern Wyoming. As Mr. Goss observed, they chose the turbulent waves far beyond gunshot range, flying about apparently in sport. The telegraph wire runs close to the shore of Lake Caud, and I at one time picked up a number of specimens killed by the wire from the flock passing by it; one of which had a wing severed from its body without a drop of blood having marred its beautiful plumage! Wilson's Phalarope, though breeding there in numbers, always chooses the meadow lands, are very rarely seen upon the lake, and then only close to the shore. As in the Northern Phalarope, Wilson's Phalarope also has the female far more richly marked than the male.—S. W. WILLISTON, *New Haven, Conn.*

NEST AND EGGS OF *PARUS MONTANUS*.—Mr. Wm. G. Smith sends me from Colorado the nest and two eggs of the White-browed Chickadee, of whose breeding very little is known. The nest consists of a handful of matted fur, apparently of a rabbit, mixed with some small feathers. It was placed in a hollow of a pine tree, about fifteen feet from the ground, and contained six eggs nearly ready to hatch. The eggs are *white, unmarked*, contrary to the rule in the genus and family, but as in the neighboring genus *Psaltriparus*.—ELLIOTT COUES, *Washington, D. C.*

THE GRAY-CROWNED FINCH IN CONFINEMENT.—I have the good fortune to have in my possession a fine, live specimen of *Leucosticte*, which I believe to be a male and a last year's "young of the year."

During February of this year (1883), which in this section of the country (Sioux City, Iowa) was an extremely cold month, many northern birds were driven south to feed and take shelter among us. During this time, when my collection of Snowy Owls and Rough-legged Hawks (*Archibuteo lagopus*) was rapidly increasing, the Gray-crowned Finches also came to pay us a visit. Although I did not see any at the time, it is evident they were here, for the bird I now have, with several others, was captured at that time by some boys in the western part of this city. It is the first time they have been known to visit this section. The wings of



the birds were cut in such a way that they could not fly, and they were left to roam about the premises. The friend from whom I received my bird, secured by an accident this one the same month it was caught.

This gentleman informed me that when he purchased the bird, the tail feathers were out, and the wing feathers cut very close to the body; but what attracted him more particularly was its bright rose color. Upon my examination, about the middle of May, I found the bird in a very forlorn looking condition. The wing feathers were fully grown, but the tail feathers had again been pulled out, and though the rose color was very bright, almost as bright as in a Cassin's Purple Finch at its best, the general appearance of the bird was a sorry one. Carefully examining the coloration of the bird, I found that the rose color was very bright on the rump and crissum, and that it continued along the abdomen and on to the breast, well up to the fore neck. The gray, which was strongly silvered, extended well down on the nape, and up to the crown, thence passed towards the bill as far as the lores, encircling the eyes and covering the auriculars, but leaving a dark chocolate patch at the temples, which formed the dividing line at that point between the gray above and below, and connected with the like color of the neck. The patches on the crown, chin, and throat were very nearly of the same color,—dark brown; the crown patch might be called a black. Bill and feet black, the base of the bill encircled by an indistinct line of yellowish-white feathers. My friend informed me that but little change had taken place in the color of the bird from February to this date, except that the rose tint had become brighter.

The bird was represented as being a fine singer and perfectly contented, having for a companion a Canary. Shortly after this I started on my western tour, and, on returning a few days ago, this rare bird was presented to me. He is now (August 22) as fine a looking little fellow—plump, healthy and contented—as any bird lover would wish to have for a pet or study.

The summer has been, and is now, quite a sultry one, but this high-altitude bird having been kept in a cool place seems to fully enjoy his confinement. For one month he has not uttered a note, but has been engaged in putting on a new dress, which thus far presents the following: General color, dark chocolate, the feathers of the wings and tail almost black, with edgings of yellowish-white; the feathers on the neck, breast, and abdomen edged also, but with a more ashen tinge. Points of upper tail-coverts very prominent with yellowish-ash. *No rose color anywhere.* Crissum and tibia very light ash; lower tail-coverts light ash, with a few black central spots. Bill *yellow*, with black tip, and immediately back of this black tip the yellow has a peach-blossom tinge. The gray on the head is much duller than when I saw the bird last May, and now falls lower upon the neck, but, instead of covering the auriculars, only encircles the eyes with a very narrow line above and below, which disappears at the lores. The coloring of the auriculars is such that I think before long this part too will be of a like gray color, and will finally take on the former silvery effect. The crown patch of dark brown continues from its

connection with the gray until it is separated from the bill by a very light line of pure white feathers encircling the base of the bill. The chin and throat patch are uniform umber brown. Feet and tarsi black.—D. H. TALBOT, *Sioux City, Iowa*.

DESCRIPTION OF THE NEST AND YOUNG OF THE PYGMY OWL (*Glaucidium gnoma*).—During my absence from Fort Klamath, between June 9 and 24, 1883, one of my men accidentally found the nest of this Owl on June 10. It was in an old Woodpecker's hole in a live aspen, about twenty feet from the ground. The cavity was six or seven inches deep, and filled for about half the distance with feathers of various species of birds. When opened by me it contained four young, which I took to be about ten days old. They were feeding on a Chipmunk (*Tamias asiaticus townsendi*) which was still warm. One of the parents—the female—was also secured at the same time. The tree in which the nest was found stood in an open, exposed position, within ten yards of one of the butts of our target range which is in daily use. Although I searched carefully for pieces of the egg-shells I failed to find any.

The plumage of the young is as follows: Top and sides of head and neck dark ash, *unspotted*; rest of upper parts dark reddish-brown or brownish-chestnut; wings spotted with ochraceous; beneath white with reddish-brown along the sides and numerous longitudinal streaks of dull black on the breast and belly; an ill-defined band of dusky across the throat; sides of the throat pure white.—CHARLES E. BENDIRE, U. S. A., *Fort Klamath, Oregon*.

THE BALD EAGLE FISHING.—A few days ago, while driving by a creek that makes in from the Penobscot River, I noticed a Bald Eagle circling around high in air, above the creek. Presently he began to descend in slow spirals, and I could plainly see that he spied some object in the water, for he bent his neck downward and partly extended his legs; then taking a wide circle he suddenly darted down obliquely and stretching forth both legs to their full length trailed them for several feet along the surface, finally making a quick thrust with the right foot and seizing a small fish near the head, bore it away. It was plain that he saw the fish from the first and circled only for the purpose of getting behind it and approaching unseen. Altogether it was the best peice of stil'l-hunting I ever saw, and it is the first time I have seen an Eagle catch a fish.—MANLY HARDY, *Brewer, Maine*.

A FLOCK OF WHITE HERONS (*Herodias egretta*) IN EASTERN MASSACHUSETTS.—Eight of these birds paid a visit to the salt marshes in the town of Quincy in August last, and on the 23d of that month Mr. Geo. H. Bryant succeeded in shooting one. I saw the mounted bird in the shop of P. W. Aldrich, Washington St., Boston, and it was a handsome specimen. The flock was much harassed by gunners, and another Heron is reported to

have been killed since. As stated in "New England Bird Life," where may be found the record of the species for this section, it appears to be a more frequent visitor than either the Snowy or Little Blue Heron.

I know of no record of the occurrence in New England of the Louisiana Heron or Reddish Egret.—H. A. PURDIE, *Boston, Mass.*

HERODIAS EGRETTE AT AMHERST.—I record with pleasure that while I was away from home, recently, three of these beautiful and rare birds were seen in the swamp about what we here call "Hadley Pond." One of these, a fine specimen, was shot and purchased for the Amherst College collection. It is now being stuffed at Mr. O. B. Deane's at Springfield. I do not recall that the bird has been authentically noted from this State since 1875, at Plymouth, Mass. The Amherst specimen was taken within a day or two of Aug. 27.—W. A. STEARNS, *Amherst, Mass.*

WILSON'S SNIPE (*Gallinago wilsoni*) NESTING IN MASSACHUSETTS.—As I was hunting for Least Bitterns' nests in one of our swamps in Brookline, where they breed in considerable numbers,—that is, I found three nests this year there. one with three eggs, the other two with five young ones apiece,—I thought I would leave the sedges where they build and look among the high grass, which grows at the side of the marsh for a Carolina Rail's nest. Just on the border of the grass I started up a Snipe, that seemed to me to sit closer than usual and in a very curious manner. She came very near to me, chiding me as if in great trouble. I looked in the grass very carefully and finally found her nest. with four half-grown young birds, which, when I approached, scampered off among the high grass which surrounded the nest. They seemed to be able to run about and take care of themselves perfectly well. The date was the 18th or 19th of June, I cannot be sure which, as I have mislaid my book in which it was entered. I think the eggs must have been laid about the second or third week in May, which seems to me quite early.—NATHANIEL A. FRANCIS, *Boston, Mass.*

BAIRD'S SANDPIPER AT SCARBOROUGH, MAINE.—Two immature examples of Baird's Sandpiper (*Actodromas bairdi*) were shot at Little River, Scarborough, on September 11, 1883, by my friends Messrs. Winthrop Root and Fred. Mead. who gave me an opportunity of examining their specimens in the flesh. The birds were killed together. but were unaccompanied by others of any species.

It will be remembered that, up to the present time, but one instance has been recorded\* of the occurrence of Baird's Sandpiper on the Maine coast.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

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\* See this Bulletin, Vol. II, p. 28; also Proc. Portland Soc. Nat. Hist., April, 1883.

CORY'S SHEARWATER (*Puffinus borealis*) OFF THE COAST OF MASSACHUSETTS.—On the 2d of last August I was out in a yacht collecting sea-birds, about thirty miles eastward from the southeast end of Cape Cod. Wilson's Petrels, Pomarine Skuas, Greater and Sooty Shearwaters were abundant. Both these Shearwaters were often seen sitting on the water in flocks, associating freely with one another, and were easily approached.

On one occasion I sailed up to quite a large flock, and shot a *P. fuliginosus*. As the rest rose, I suddenly perceived amongst them a Shearwater entirely new to me, and my other barrel soon brought it down. The yacht was put about, and I was on the point of laying hands on the prize, when it suddenly started up, and was gone,—much to my chagrin. Soon, however, I saw a similar one flying about in company with several of the common Shearwaters. It presently came near, and was shot, proving to be a Cory's Shearwater. This was enough to keep me on the lookout for more, and when about half way in to land, another came scaling along over the water, and was also secured. These were all that I saw. One of the fishermen, to whom I showed the birds, reported having seen a few others the next day. This, however, may be open to some doubt.

In habits they perfectly resemble the other species, but are readily distinguished from *P. major* by their lighter colors, and conspicuously large, yellow bill. They are very tame, and when engaged in feeding may almost be run down by a boat. Considerable effort is shown in rising from the water, but when once a-wing, they fly with great swiftness.

Nothing is known of them by the fishermen, who perhaps overlook them among the thousands of the other commoner varieties. Specimens were first taken by Mr. Charles B. Cory in nearly the same locality where mine were captured, and were described by him in the Bulletin of April, 1881.—HERBERT K. JOB, *Boston, Mass.*

ADDENDUM TO LIST OF BIRDS ASCERTAINED TO OCCUR WITHIN TEN MILES FROM POINT DE MONTS, PROVINCE OF QUEBEC, CANADA; BASED CHIEFLY UPON THE NOTES OF NAPOLEON A. COMEAU.—Mr. Comeau has recently sent me skins of the following species that were not in the original list (see this Bulletin, Vol. VII. No. 4, pp. 233-242, Oct. 1882). They were all killed at Godbout in May and June, 1883.

148. *Dendroeca cærulescens*.—June 7. ♂.

149. *Vireo flaviviridis*.—May 13. For further remarks upon this species, which has not previously been recorded from Northern North America, see page 213.

150. *Dolichonyx oryzivorus*.—♂.

151. *Scolecophagus ferrugineus*.

152. *Empidonax minimus*.

153. *Empidonax trailli*.—June 7. ♀.

154. *Contopus borealis*.—June 6. ♂.

During the fall migration Mr. Comeau secured specimens of two additional species new to the locality. They are:

155. *Tryngites rufescens*.—August 28.

156. *Tringa alpina americana*.—August 28.

In September, 1882, Mr. Comeau shot another specimen of the Carolina Dove (*Zenaidura carolinensis*).—C. HART MERRIAM, M. D., *Locust Grove, N. Y.*

THE MOVEMENTS OF CERTAIN WINTER BIRDS.—From a letter lately written me by Mr. Manly Hardy, I make the following interesting extracts: "I see in the 'Canadian Sportsman' an article on the migration of Owls which agrees nearly with my own observations, and I would like to have the question presented to the readers of the Bulletin . . . 'why do Owls, Grosbeaks, Crossbills and some other northern birds come south in winter?'"

"The article referred to states that Snowy and other migratory Owls are most numerous there [Canada?] in December and January. By reference to a list of dates of capture of a large number of Snowy Owls, I find that most of them have been taken from November 15 to December 10, and very few later than that date. With Hawk Owls it is the same. Grosbeaks, in winter when they are plenty, come late in November, and are nearly all gone by December 15, though a few remain all winter. Now why do these birds come here at all? I can say almost positively that the two reasons usually given, viz., lack of food and extreme cold—are not the real reasons. The Owls are invariably fat when they arrive and cannot have lacked for food farther north. The Grosbeaks and Crossbills, also, are very fat, and do not need the berries which some persons think they depend upon, for both can live independently on the seeds of the pine and spruce. If there were not a berry in ten years they would not suffer. Moreover, the idea that any of these birds feel the cold is not entitled to a moment's consideration. The Snowy Owl, for instance, can bear as much cold as a Polar Bear. Furthermore, if either of these reasons were the true one, all these species would be likely to come the same winter, an event which does not usually happen."

The question thus raised by Mr. Hardy is an interesting one. As he maintains, the explanations which have been given to account for the movements of these birds do not seem to be entirely satisfactory. Nevertheless I cannot think that they are erroneous. Birds, like many other beings, are fond of variety. The fact that a Grosbeak or Crossbill can sustain life on the seeds of a certain tree does not necessarily prove that it may not undertake long journeys in search of *tid-bits*. Granting, also, that it can endure an Arctic winter, it does not follow that it may not enjoy a few months' relaxation in a warmer clime. The truth of the matter probably is, that when their breeding season is over these birds habitually wander over vast extents of country. If the winter happens to be severe in the north they find a gradual improvement in conditions southward, and naturally, taking this direction, push on until a land of plenty

is reached. Even here they do not always pause, their habitual restlessness of disposition leading them to continued search for fresh feeding-grounds. Thus they come and go, sometimes without apparent regard to conditions which govern the movements of our more regular migratory visitors.

At least this seems to me a satisfactory explanation of the problem at large; but will not other observers contribute their opinions and experience?—WILLIAM BREWSTER, *Cambridge, Mass.*

THE RIDGWAY ORNITHOLOGICAL CLUB OF CHICAGO.—We are pleased to learn that the ornithologists of Chicago have organized an ornithological society under the name of "The Ridgway Ornithological Club of Chicago." The meeting for organization was held on September 6, 1883, when a constitution and by-laws were adopted, and officers elected, as follows: President, Dr. J. W. Velie; Vice-President and Treasurer, George F. Morcom; Secretary, H. K. Coale; Curator, Joseph L. Hancock; Librarian, F. L. Rice. The name adopted, it is needless to say, is in honor of Mr Robert Ridgway, the eminent ornithologist and Curator of Ornithology at the National Museum at Washington. The society contemplates the formation of an ornithological library and museum of general ornithology. Meetings are to be held the first Thursday of each month. The Club already numbers fifteen members, and we heartily wish them success.—EDD.

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 ERRATA.

- Page 6, line 19, for *eneucleator* read *enucleator*.  
 " 39, " 18, for **erythrophthalmus** read **erythrophthalmus**.  
 " 62, " 40, for *glauciun* read *glaucium*.  
 " 80, " 23, for *miamensis* read *miamiensis*.  
 " 103, " 31, for "*pallassi*" read "*pallasi*."  
 " 122, " 2, for 1882 read 1883.  
 " 151, " 8, for LISTS read LIST.  
 " 153, " 21, for **bendirei** read **bendirii**.  
 " 169, " 15, for *Reich* read *Reich*.

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A Quarterly Journal of Ornithology.

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OF THE

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### A Quarterly Journal of Ornithology.

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